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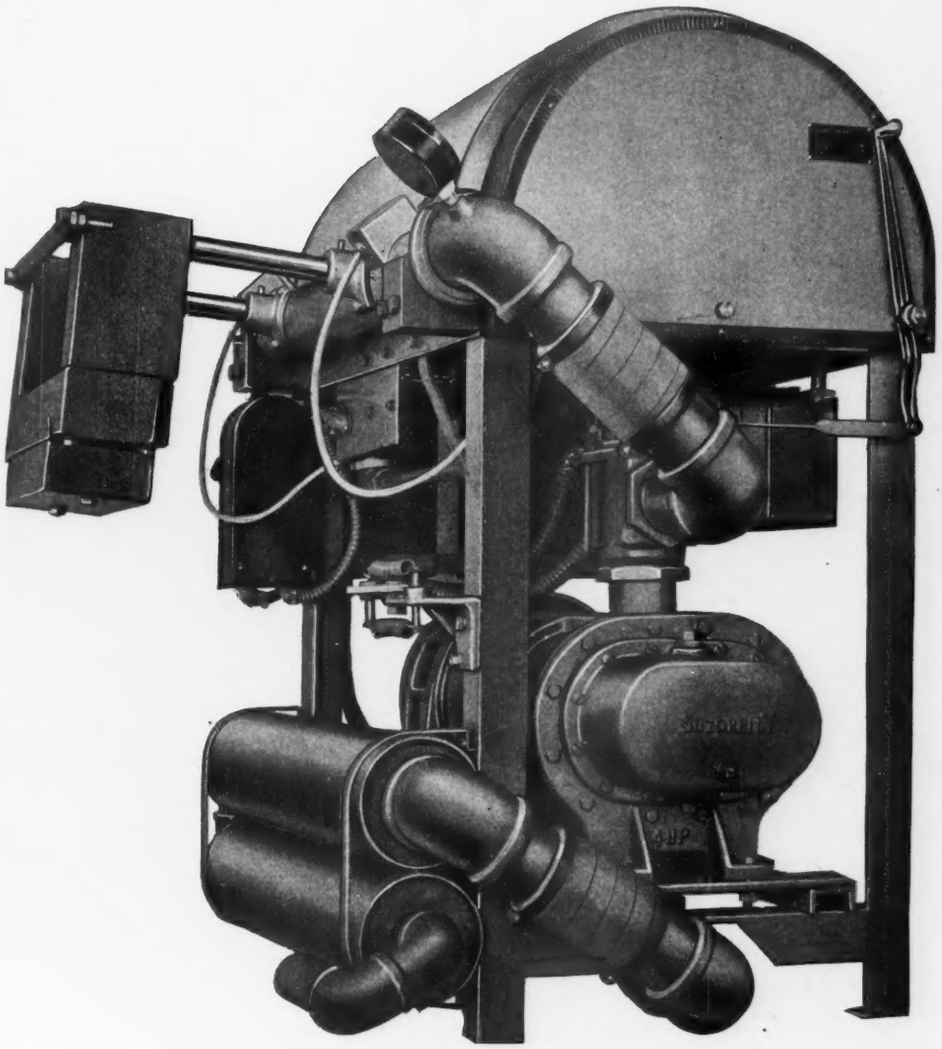

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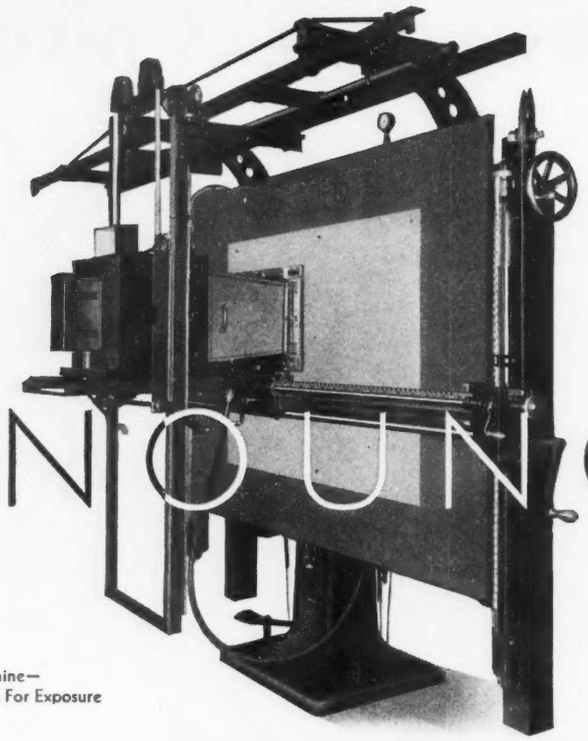

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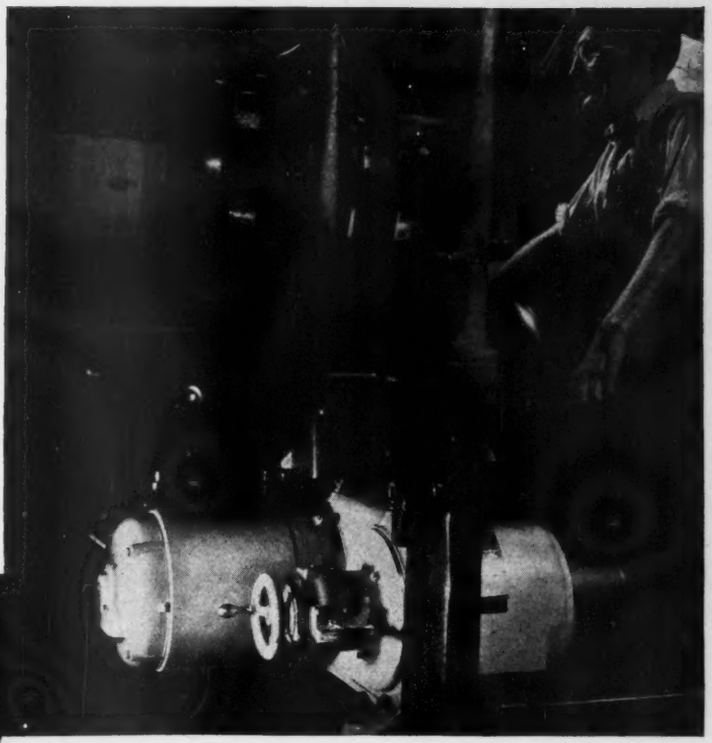

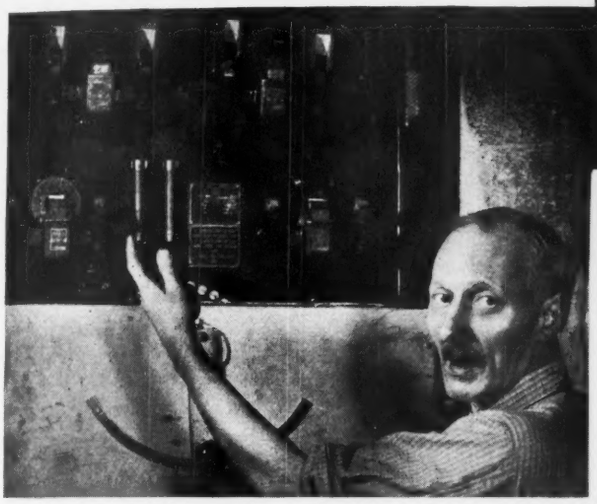

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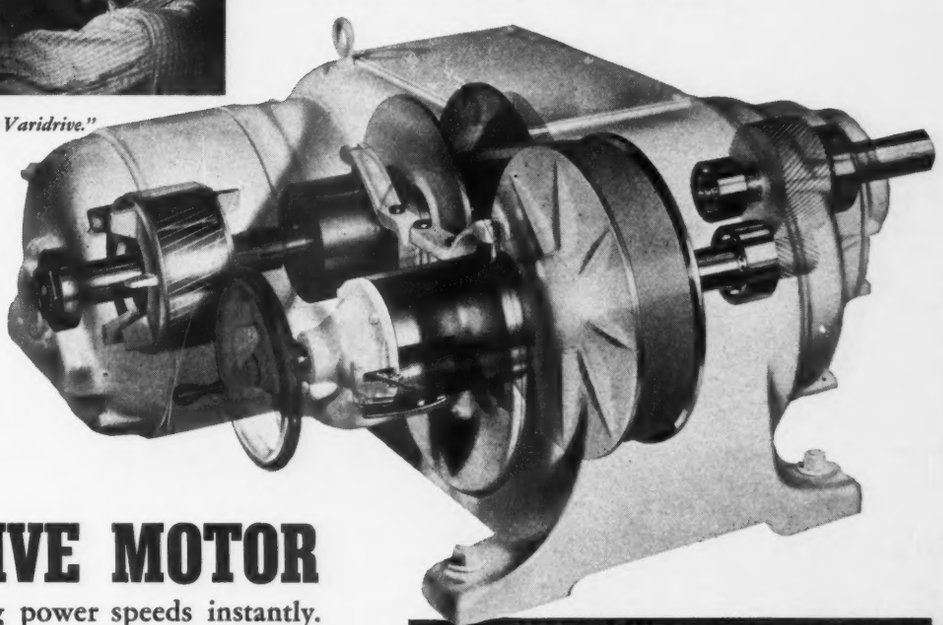

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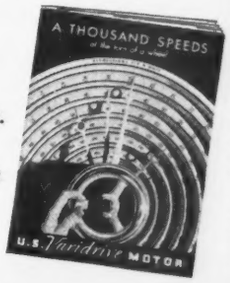

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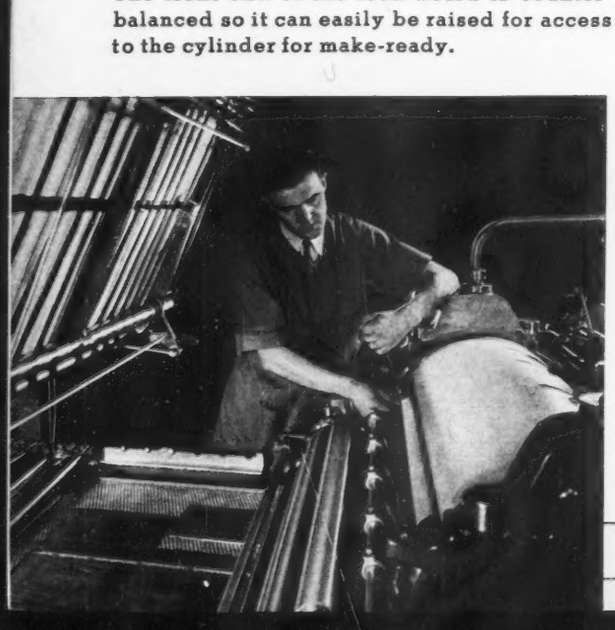
Into this day of speed and vogue of color, comes the Miehle 41 Two Color Automatic Unit. This new size machine enables progressive printers to more easily meet modern demands. While retaining the well proven principles developed in Miehle manufacturing experience, it includes many advanced features that save time in make-ready and wash up, insuring convenient handling of the form, and setting new high standards in production.

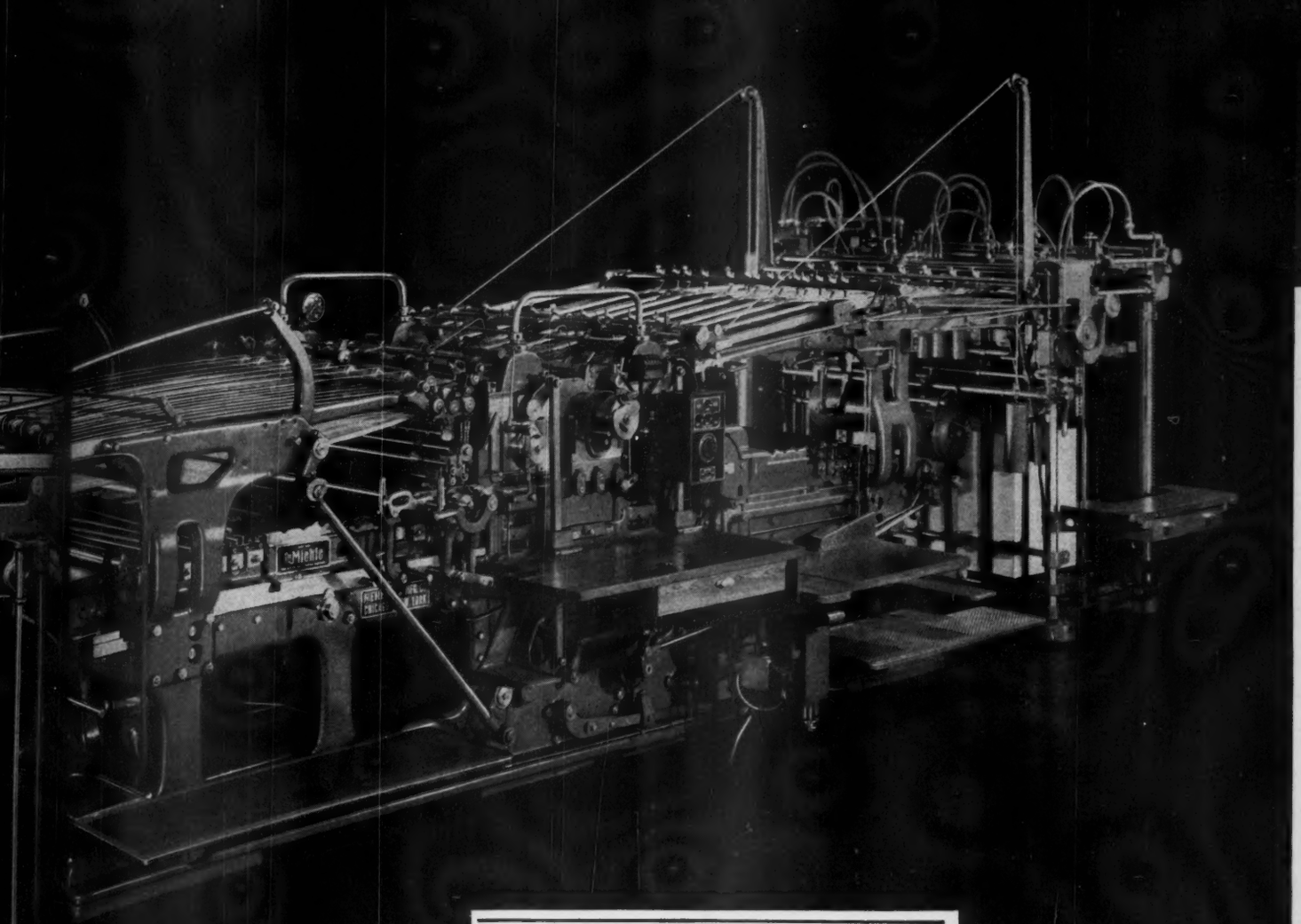
The front end of the feed board is counterbalanced so it can easily be raised for access to the cylinder for make-ready.



This new size Miehle Two Color takes a

MIEHLE PRINTING P

CHICAGO



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A NEW SIZE
41 TWO COLOR
AUTOMATIC UNIT

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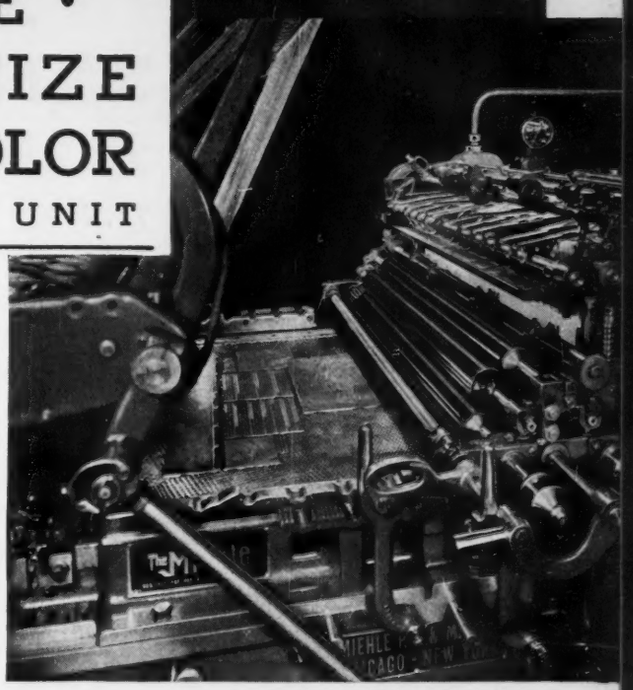
standard sheet 25 x 38 inches. It will also handle a sheet as large as 27 x 40½ and as small as 11 x 17. It will print in accurate register two colors in one operation at speeds ranging from 1500 to 2800 or the equivalent of 3000 to 5600 impressions per hour. This is made possible by the use of rugged and well balanced frames and substructure, light but strong reciprocating parts, efficient feeding and delivery mechanisms. This modern ***new size*** Miehle Two Color, installed in your plant, will give you the "edge" on competition.



Four rollers cover the entire form without reversing on it, producing a clean, evenly inked sheet.

PRESS & MFG. CO.
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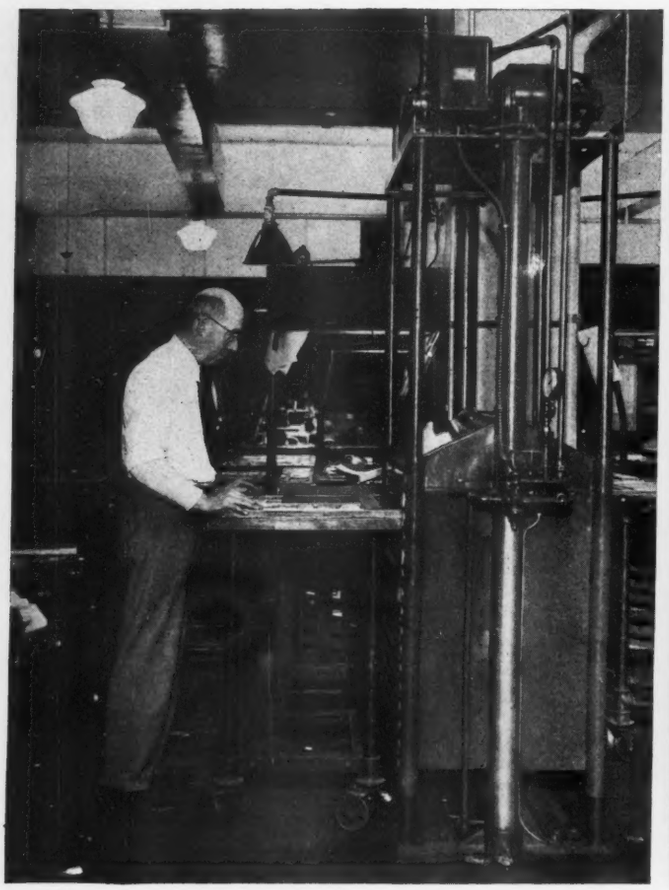
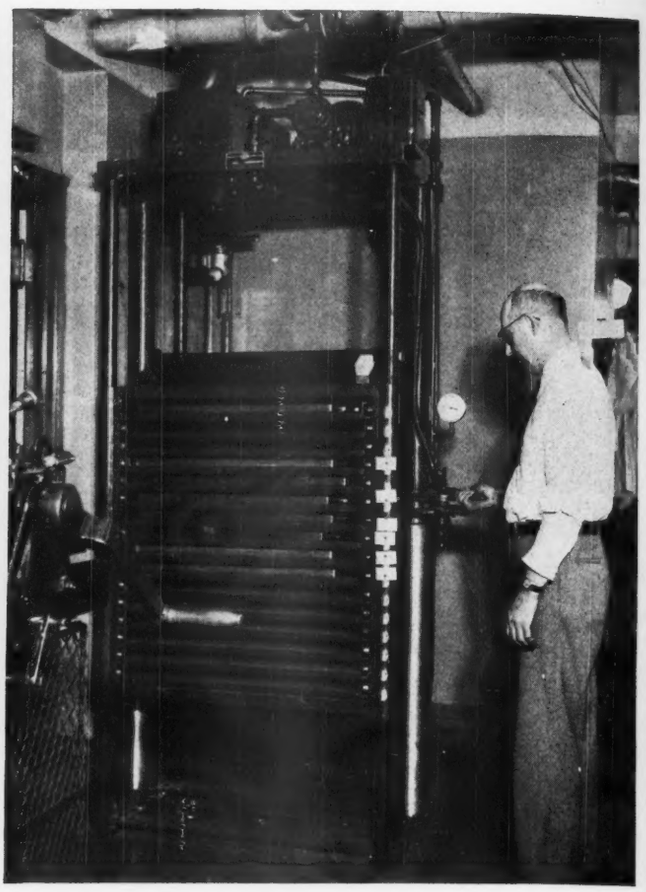
Print It on a Miehle

SAVES COMPOSING ROOM FLOOR SPACE





The letter on the opposite page tells the story of **The Stahi Power-Lift Form File,** as a Composing Room Floor Space Economizer.

The pictures above illustrate these compact **Form Filing Units,** as they appear in the **Composing Room of The Portland, Oregon Journal.**

Crowded composing room space slows up operation and increases production cost!

The Stahi Power-Lift Form File is an economical way to gain **Composing Room Floor Space,** without expensive building alterations. A system of filing forms with a minimum number of make-up trucks, and each and every form instantly available as required. **Write us for complete information.**

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THE STAHI POWER-LIFT FORM FILE

The JOURNAL
LARGEST DAILY IN THE PACIFIC NORTHWEST
JOURNAL PUBLISHING COMPANY
PORTLAND, OREGON

Sept. 18, 1936

Mr. A. W. Cochran
Mc Alpin Hotel
New York City, New York

Dear Mr. Cochran:

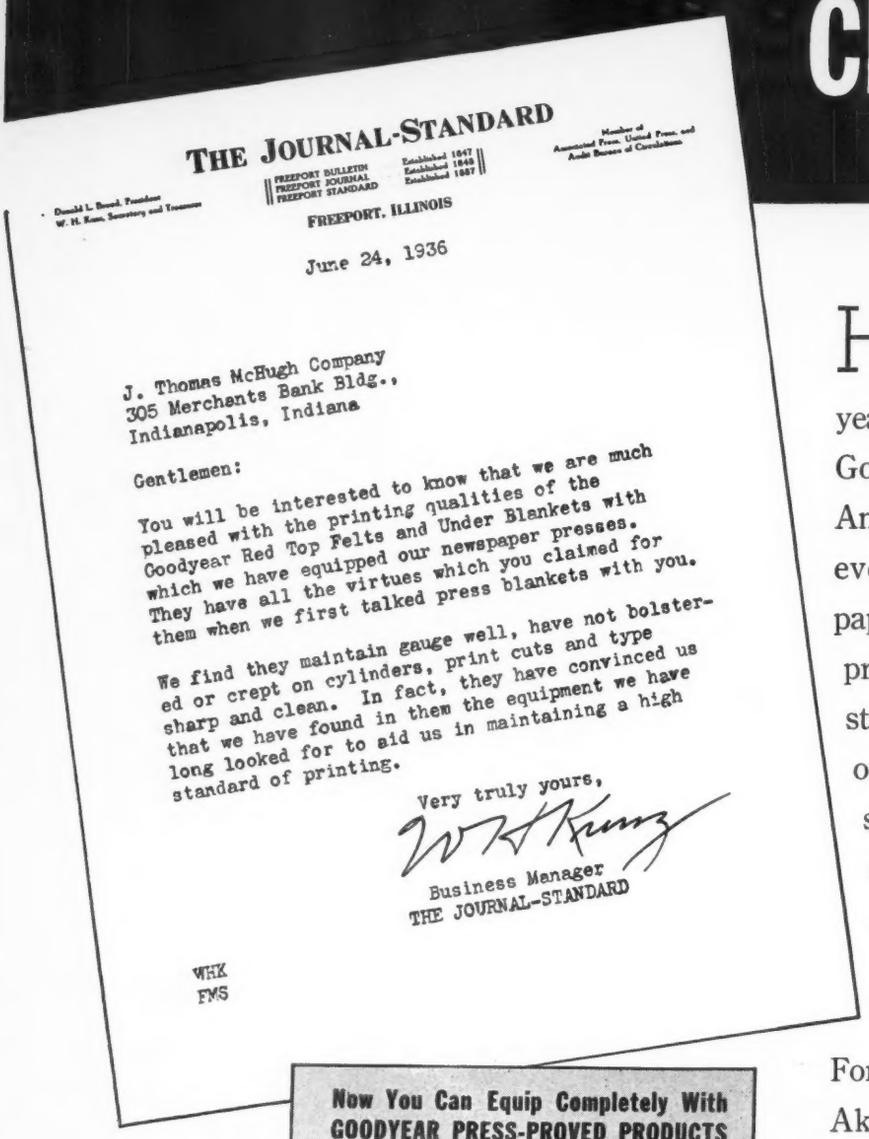
As per your request, we are sending you photographs showing the two power lift form files now in our composing room. The pictures give you a fair idea of how they operate, but by no means do they tell the story of the real help they have been to us.

You take, for instance, today we are getting out forty page paper on the daily and sixteen pages Society and Drama and twenty-eight pages Sunday Bulldog this afternoon. The lifts enable us to get thirty-two pages out of the way instead of having thirty-two additional trucks and chases occupying a large amount of space. Your two form lifts occupy the space of about three trucks. You will recall how limited the space in our composing room is, so you can fully appreciate what your lifts have meant to us.

Yours very truly,
THE JOURNAL

By---G. F. Law
Asst. Bus. Mgr.

"THEY HAVE ALL THE VIRTUES CLAIMED!"



THE JOURNAL-STANDARD

FREEPORT BULLETIN — Established 1847
FREEPORT JOURNAL — Established 1849
FREEPORT STANDARD — Established 1887

Member of Associated Press, United Press, and Audit Bureau of Circulations

Donald L. Brand, President
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FREEPORT, ILLINOIS

June 24, 1936

J. Thomas McHugh Company
305 Merchants Bank Bldg.,
Indianapolis, Indiana

Gentlemen:

You will be interested to know that we are much pleased with the printing qualities of the Goodyear Red Top Felts and Under Blankets with which we have equipped our newspaper presses. They have all the virtues which you claimed for them when we first talked press blankets with you.

We find they maintain gauge well, have not bolstered or crept on cylinders, print cuts and type sharp and clean. In fact, they have convinced us that we have found in them the equipment we have long looked for to aid us in maintaining a high standard of printing.

Very truly yours,

W H Kunz

Business Manager
THE JOURNAL-STANDARD

WHK
FMS

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Branches in all principal cities

Now You Can Equip Completely With GOODYEAR PRESS-PROVED PRODUCTS

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Goodyear Red Top Felt Blankets
Goodyear Rubber Underpacking
Goodyear Rubber Ink Rollers
Goodyear Press-Cutting Rubbers
Goodyear Wingfoot Air Hose

Made by the makers of Goodyear Tires

THE GREATEST NAME IN RUBBER

GOODYEAR

MORE NEWSPAPERS ARE PRINTED ON GOODYEAR RUBBER UNDERPACKING THAN ON ANY OTHER KIND

OCTOBER 1936
Volume 53 No. 1

PRINTING EQUIPMENT ENGINEER

Trade-Mark Registered U. S. Pat. Office

A Technical Publication for the Mechanical Executive Responsible for Printing Production, Equipment and Supplies in the Commercial, Magazine, Private Plant and Daily Newspaper Field

Established 1910

Member of Controlled Circulation Audit

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509 FIFTH AVE., NEW YORK, N. Y. PHONE VANDERBILT 3-5191

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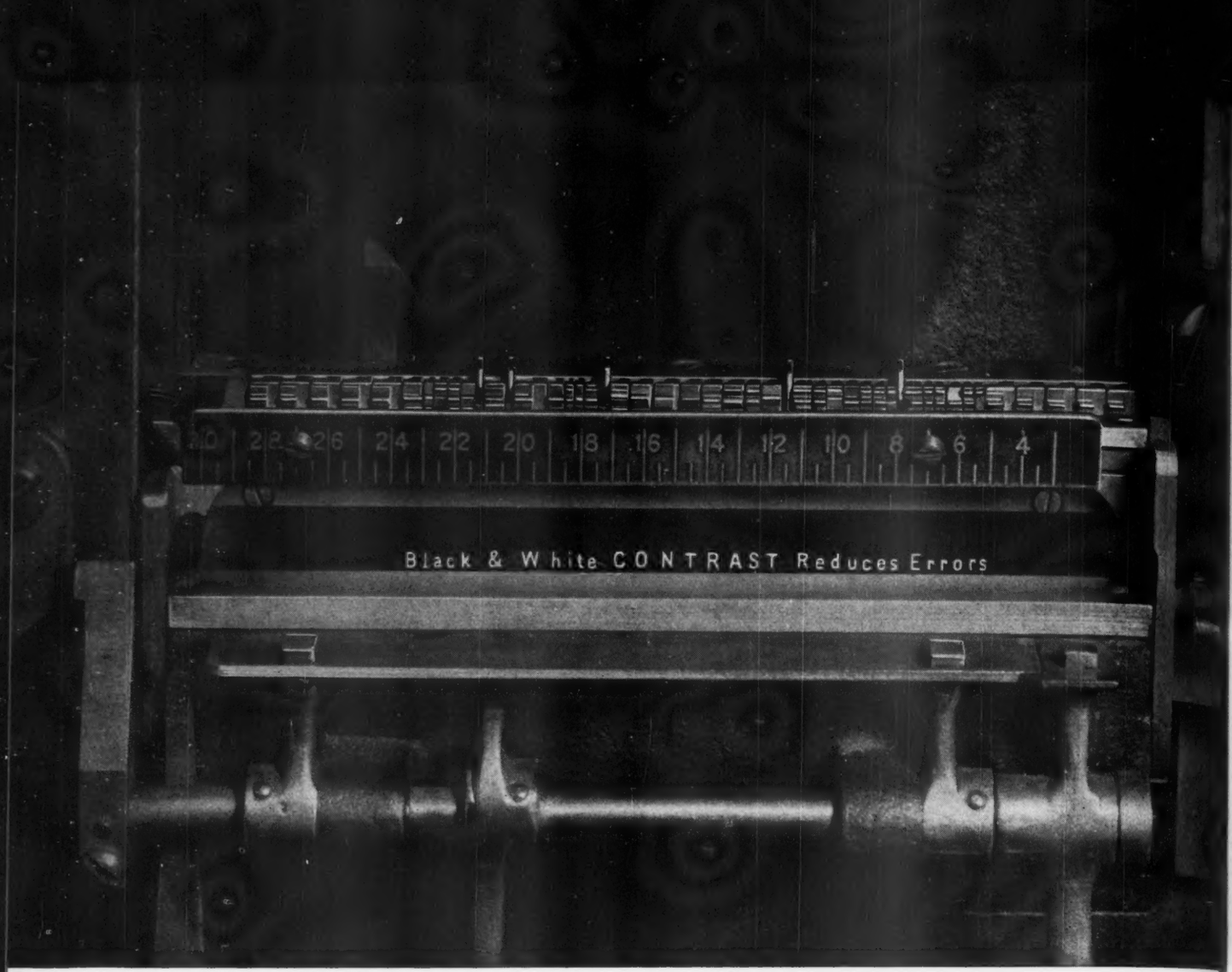

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Note in the picture how easy it is to read a line in the assembling elevator when Black and White Matrix Contrast is used. When the operator glances at his line before "sending it in," any mechanical error that may have occurred "sticks out like a sore thumb" and is quickly corrected before the line is cast. In this way twenty-five per cent of all errors are eliminated.* This big reduction of errors saves time, speeds up machine production, conserves eyesight and energy, and helps to promote composing room efficiency. Write for new printed matter on Matrix Contrast Service, including the results of 44 painstaking surveys made in newspaper plants.

*** Twenty-five per cent is the conservative GUARANTEED figure; the actual average is nearer thirty-five per cent.**

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Sole Licensees of the Percy L. Hill Matrix Contrast Patents Nos. 1,466,437 and 1,796,023

A Masterpiece

Ogden, Utah, September 22, 1936.

Sorry to be so late in passing comment. I consider your annual Reference Book to be a masterpiece. It is a most valuable book to have around. *Printing* EQUIPMENT *Engineer* is an excellent magazine all the time and I am always glad to receive it.

B. F. THOMAS, *Press Supt.*
Standard-Examiner.

Air

And Its Value to Printer When Properly Controlled

By FRED MERISH*

PROBABLY no industry can derive greater benefits from air conditioning than the printing industry. In this field, air conditioning offers not only greater human comfort for executives and workers, thereby increasing working efficiency and preserving health in a plant and office, but it enables pressmen to turn out technically perfect work, regardless of weather conditions.

Humidity has always been the real Printer's Devil in a printing plant. Left to do as it pleases, it plays havoc with materials, machines and workers. A main function of air conditioning is to control humidity and keep it from causing trouble winter and summer. One reason why humidity plays such havoc in a printing plant is that paper is one of the most sensitive-to-moisture products. It is a veritable barometer. The millions of hollow cellulose fibres in paper are continually absorbing or exuding moisture in proportion to the humidity in the air. As the fibres absorb moisture they increase in diameter; as they give off moisture, they shrink in diameter. Naturally, this expansion or contraction changes the dimensions of the paper, causing curling, scalloped edges and waviness, so detrimental to good register. Then too, the sizing materials used on paper, being animal glue or vegetable starch, are often more susceptible to humidity than the cellulose fibres, hence, surface-sized paper may develop a greater degree of contraction or expansion. From the foregoing it may be seen that printing technique, to a great extent, depends upon the weather and air conditioning equipment, which maintains atmospheric conditions at safe temperatures for first class printing, is worth the investment in many ways. Through maintaining a high standard of technique it builds prestige and goodwill for the plant and saves money for the printer by minimizing spoilage and increasing production. Air conditioning also increases bodily comfort and comfortable workers function more efficiently.

Humidity is troublesome winter and summer. In summer there is too much humidity in the air, certain rollers soften quickly and the cellulose fibres in paper expand in proportion to the moisture in the air. "It isn't the heat, it's the humidity," many a sweltering individual has bemoaned on a dog day with a glance at the thermometer reading 70 deg. Seventy degrees with 100 per cent humidity, 2 pints of moisture in the air, feels like blood heat. Cut humidity 50 per cent and the atmosphere feels comfortable even though the thermometer still reads 70. This shows what an important factor humidity is in temperature. It affects everything whether bodily tissue or tissue paper.

In winter, humidity acts just the opposite way. The air in an interior in winter is too dry and draws moisture from the paper, causing dimensional contraction. The hotter the plant in winter, the dryer the air, unless moisture is added automatically with air-conditioning equipment, so the well-heated plant without air conditioning may have more trouble in winter with poor register than the colder plant. As air is heated it demands more and more moisture. The cold air of winter normally possesses a comparatively small percentage of humidity, but being too cold it doesn't try to absorb any more. That same cold, low-moisture-content air, brought inside and heated begins to hunger for moisture. As a result, it takes its moisture where it can find it, from paper, ink rollers, human bodies, plants, furniture, books, etc. This explains why plants languish in steam-heated interiors, why furniture falls apart, book bindings disintegrate, why paper has a tendency to crack when folded, why register may be poor, why workers feel languid and lack pep. The dry air is continually taking moisture from the bodies of workers, moisture that they need to feel in tiptop working condition. Dry nostrils, parched throats and a tendency to colds are other manifestations of inadequate humidification in winter. Some heated interiors in winter have a relative humidity of 20 per cent—about the same as the relative humidity over the Sahara Desert. Safe temperatures in a printing plant are around 70 deg. F. with 50 per cent relative humidity. Air conditioning protects the health of employees, increases working efficiency, sometimes 25 per cent, thereby minimizing absences because of sickness.

Static is another trouble-maker, particularly in winter and this is due to too little moisture in the paper and

*Pompton Lakes, N. J.

Wagner in Cleveland

Frank E. Wagner, well known Craftsman and manager of the testing department of a paper manufacturing company, will address the Cleveland Club of Printing House Craftsmen at the Hotel Cleveland on Thursday, October 15. The title of Mr. Wagner's talk is "How Will It Print?"

surrounding air. The paper-makers can season paper to a certain point but they have no control over it after it leaves their warehouses. Paper stored in a cold storeroom by the printer, brought into the pressroom and put right in work, may fly all over the room due to static. If the storeroom is cold enough such paper may have no moisture in it at all—only frozen moisture—ice. The paper maker cannot control this condition. Wavy edges on paper are usually worse in winter when the heat is high and humidity low. If all printing plants were air-conditioned, there would be less complaint about green paper, roller trouble, waviness, poor register, curling and static. Comparatively few plants are air conditioned and they may vary in humidity from 30 per cent in winter to 70 per cent in summer. Obviously, paper trouble is difficult to control with this wide variation of such an important factor as humidity.

Air conditioning does more than humidify. It cleans, circulates, humidifies or de-humidifies, heats or cools and ventilates the air. Equipment that does not do these things is not genuine air conditioning. From the mechanical standpoint, the proper circulation of air around the plant minimizes fuel costs in winter. Old-fashioned heating systems are "spotty," hot spots here, cold spots there. Uneven heat is expensive heat, as well as dangerous to health because of drafts, etc. Air conditioning filters the air of dust, dirt and impurities, which means clean rollers, clean ink, clean work, healthful surroundings, less sick leaves, no disrupted production. Air conditioning equipment may be purchased for summer service or winter service or for both, for office use only, for only part of the plant or the entire plant. It is very flexible and has been developed to the point where it is no longer as expensive as it was in days gone by. Considering its money-saving advantages, it is an investment, not an expense.

Finally, air conditioning is an old story to the printing industry. In 1902 a Brooklyn color processor, who found his paper distorted by atmospheric humidity, sought a solution to the problem. This was the genesis of present-day air conditioning. Engineers found, after experimenting with the humidity problem that it could be solved by using an atomized spray of cold water that had the effect of de-humidifying the warm, humid air, which has always been troublesome to the printer in summer or winter. Thus, one of the fundamental principles of controlling atmospheric conditions became established and the groundwork of the science of air conditioning as we know it today, began in the print-shop.

Will YOU Cooperate?

To Our Mechanical Executive Readers:

When you take a new executive position which involves a change of address, please postcard Printing Equipment Engineer *about it so your correct title, with firm name and firm street address can be changed on our mailing list.* Printing Equipment Engineer *would also appreciate postcard notice of any change in your executive personnel. Corrections will be made promptly. Thank you.*

Circulation Director.

Editor's Note

The report on which this abstract is based was assembled by Bruce Berckmans, who at the time was Manager of the Ink Division of J. M. Huber, Inc. Mr. Berckmans is at the present time Vice President of Fred'k H. Levey Co., Inc., which company does not manufacture news inks.

Theoretical Ink Analyses

Of Little Practical Value— Simple Performance Tests Suggested

IT IS the belief of news ink manufacturers that mechanical and production executives in the newspaper printing plant (from a practical operating point of view) should not be interested so much in the composition of news inks or the quantities of each raw material used, as they are in the results obtained from the ink used in the printing of the newspaper. Even though they may be accurate, analyses of news inks are of little value in the printing plant. It is shown by the manufacturer group that the making of accurate analytical reports on the proportionate content of news inks is a difficult process. The reason for this is at once apparent when it is explained that accuracy in ink analyses is dependent upon analysts having an intimate knowledge of the whole field of inks and various raw materials such as mineral, vegetable and animal oils, gums, resins, varnishes, carbon black, lamp black and other pigments, dyes and toner vehicles.

In a report submitted (by Bruce Berckmans, now vice president of the Federick Levey Company but who at the time of formulating this report was associated with J. M. Huber, Inc.) to the A. N. P. A. Mechanical Committee, it is stated that analysis of ink depends largely upon the separation of constituent materials by the difference in their solubilities. Few, if any, analysts not having daily contact with these materials, have the necessary knowledge to perform accurate separations. Even the experienced ink technician must not only use extreme care in making his analyses but must refer constantly to the great mass of detailed data assembled by long experience with each of the raw materials mentioned.

An abstract of the Report on Analyses of News Inks is printed below:

Due in part to the splendid research carried on in the field of news ink by the laboratory of the Government Printing Office, and in part to the desire of users to have some means of verifying representations made to them by news ink manufacturers, newspapers have had ink samples analyzed with increasing frequency. Generally, the reports of such analyses have varied widely from the known compositions of the inks tested. This has been the case whether the analyses were made by the Government Printing Office or by industrial laboratories. We do not imply that one hundred percent perfect produc-

tion uniformity has been maintained but that a far greater degree of uniformity control has been maintained than the analytic reports would indicate. We imply no criticism of any particular individual or laboratory, nor do we wish to appear condemnatory of any valuable research program. Because of the increasing use by newspapers of chemical analyses of news ink we wish to point out errors appearing in reports of analyses made, to explain the reasons for these errors, and to suggest simple tests which will better furnish newspapers the practical information needed.

Selection of inks in the newspaper printing plant involves comparison of inks when personal preferences are eliminated. Comparison of printed effects obtained with various inks frequently fails to make allowance for many variables affecting the appearance of ink in printed form. With regard to inks, we believe that newspapers are primarily interested in:

1. Determining the uniformity in essential practical characteristics of different shipments of ink purporting to be the same formula.
2. Determining which of several inks submitted by the same manufacturer is most suitable for the particular newspaper's use.
3. Determining which of various inks of different manufacture is preferable in essential characteristics.

As a means of making these determinations, various chemists have furnished analyses of ink samples. Reports furnished have varied from the known formulae of the inks tested primarily because inks are a combination of a number of different materials, each of which is subject to variations which may not be similar on different occasions.

Of all laboratories outside the ink industry which have attempted ink analyses, that of the Government Printing Office is probably best equipped and most familiar with the product. In referring to their reports it should be understood that we do so merely as a reference to the best laboratory available outside the ink industry and that we are not singling them out for condemnation.

In Technical Bulletin 18 of the Government Printing Office entitled "Newsprint and News Ink," on pages 74 to 81, is outlined the Government Printing Office method of analysis. On different occasions, the Government Printing Office made several analyses of the same news ink for a nationally known newspaper. The reports of these analyses showed wide variation in total solids and pigment content. In most cases the reported quantities were high. An ink known to contain 12% carbon black was in one instance reported to contain 14.4%. Our own laboratories checked the sample retained from this identical lot of ink to 12.1% pigment content. We believe the high pigment content was reported because, by the methods used, the solvents do not thoroughly separate all vehicles from the pigments. The wide variations between quantities reported also appear due to variation in the conditions under which similar tests were made at different times.

Fine Job

I just received the Reference Book. You have done a fine job. I like the way you handled the line-up of pages.

George M. Kohr, Pressroom Supt.,
The Maple Press Company,
York, Pennsylvania.

In order to substantiate the findings of our own laboratories, and for the purpose of demonstrating that newspapers have been misled unintentionally by inaccurate analyses, and that they have been furnished a mass of data which is not essential or of value from a practical operating standpoint, we furnished sets of identical ink samples unidentified except by a code number to:

Arthur D. Little, Inc., Cambridge, Mass., one of the world's foremost petroleum analysts.

Pittsburgh Testing Laboratories, well-known industrial chemists.

Huber Research & Control Laboratories, in constant contact with pigment, vehicle and ink analysis and formulation.

Each laboratory was requested to follow the technique published by the Government Printing Office in its Technical Bulletin No. 18. The results obtained by the three laboratories from identical samples of a news ink are shown in the tabulation below.

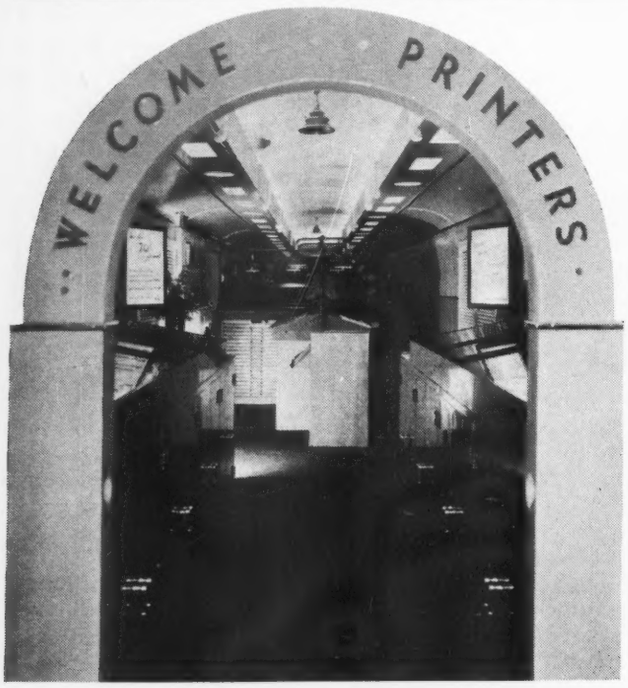
The spaces left blank in the column headed, "Original Formula" indicate such items for which a value is not computed in original formulation. Study of the foregoing tabulation indicates that familiarity with raw materials used in the production of an ink to be analyzed is necessary in order to obtain results within the limits of accuracy usually tolerated in laboratory analyses. For example, one lot of ink is divided into eight testing samples, two of each being submitted to each of the laboratories. The pigment analysis of this ink runs from a high of 15.03% to a low of 10.27%, the correct amount per formula being 12%. The toner percentage

(*Continued on Page 50*)

NEWS INK ANALYSES*

Items	*Orig.*	*Little*		*Pittsburgh*				*Huber*	
	A	*No. 1*	*No. 4*	*No. 5*		*No. 8*		*No. 13*	*No. 16*
Percent Total Solids	—	16.38%	13.06%	14.55	14.61	14.67	14.56	—	—
Toner	2.0%	1.35	1.49	2.72	2.77	4.33	4.29	1.89%	2.04%
Color Toner	Violet	Violet	Violet	Violet	Violet	Violet	Violet	—	—
Pigment	12.0%	15.03%	11.57%	11.83	11.84	10.34	10.27	11.9%	12.1%
Vehicle	86.0%	83.62	86.94	85.45	85.39	85.43	85.44	86.21	85.86
Water	—	0.30	0.30	trace	trace	0.12	—	.15	.12%
Rosin	—	none	none	none	none	none	none	none	none
Grit	—	0.014%	0.007%	0.04	—	0.04	—	.008%	.009%
Specific Gravity at 25 C.	—	0.984	0.992	—	—	—	—	—	—
Weight per Gallon at 25 deg. C.	—	8.18 lbs.	8.24	8.31	—	8.32	—	8.19	8.20

*Editor's Note: In reprinting an abstract from the original report, it is not essential to include analyses of Inks B and C which were divided similarly to Ink A printed above, and submitted to the Laboratories for analyses.



Notice those two light round spots, one in either jamb of this doorway in one of the cars of the Printers Progress Special Train? Well, this pair of lamps is part of an electric eye apparatus which will count you as one of the train visitors when your body intercepts the light rays as you enter the train.

Facts

Technical and Otherwise About Printers Progress Special

By Staff Writer

FOR the purpose of providing the necessary housing for the Printers Progress Special, the sponsors obtained three stripped 75-ft. standard baggage coaches from the New York Central R. R., having nothing in them but new wood floors and some protecting superstructure around sliding doors. This protecting work was so bulky for the purposes of the train that the first operation was to tear it out.

A. T. F. hired an architect and engineers and went to work immediately. Actual work of revamping the cars commenced almost simultaneously with the idea. Apparent pandemonium reigned in these coaches but it was an illusion. Underneath it all was *purpose*, which was kept coordinated by daily *round-table* lunches, at which time all of those responsible for the various activities gathered. They reported, argued, fought, compromised and agreed on the next day's work.

Out of this apparent confusion emerged the train as it is now presented to the industry. Admittedly not perfect, but so near so that it will escape any criticism except from people having a high degree of technical engineering knowledge—and all in the span of four short weeks.

There is an additional sleeping and club car in the train but it was unnecessary to rebuild it.

All of this was done without thought of cost. In fact, the total expenditure is not yet known. The important thing was to get it done and in operation with the least possible delay, knowing that any increased cost would be justified if sufficient time was saved.

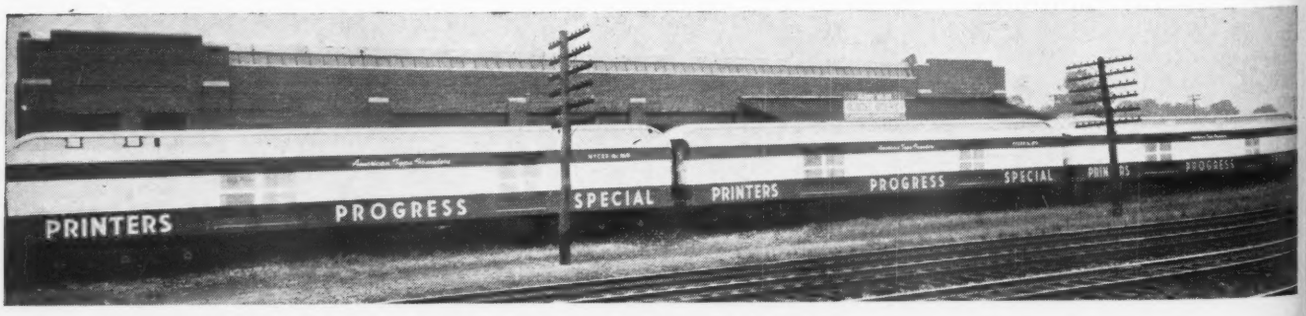
Train is Air-Conditioned

The train is completely air-conditioned, having a ventilation system providing a complete change of air in the coaches every three minutes. This is unusually high but was necessary because of the great number of people expected on the train at one time. Crowds throw off a tremendous "body heat." This precaution proved to be correct as on Sept. 15 in Grand Central Terminal in New York City 2300 persons visited the train. This was a little more than double the expected maximum. Yet the "factor of safety" in the system proved ample and a comfortable temperature was maintained in spite of the fact that machines are operating and are likewise radiating heat into the cars.

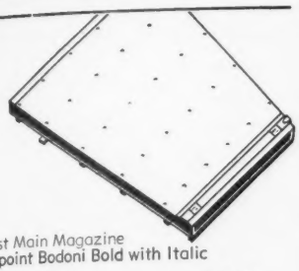
As previously stated, all mechanical displays are operating. Current for power as well as for lighting is provided by a gas engine generating plant providing 110 volt d.c. current.

Technique Used to Cool Generating Room

Extreme difficulty in cooling the generating room was encountered. The room is insulated from the rest of the car both for sound and heat and it proved to be untenable when in operation as the temperature in the generating room rose above 140 deg. F. After being told by experts that "it couldn't be done," the difficulty was eliminated. It was accomplished by reversing the usual gas engine cooling system. Instead of mounting the fan in front of the radiator and blowing cool air through it towards the motor, the cooling system was reversed. Large cold-air intakes were provided near the ceiling at the opposite end of the room. The radiator was disconnected and reset at a point where air could be sucked through from the engine side, giving plenty of room to pull air around all sides of the motor. This air drawn through the radiator is then discharged through a duct direct to the outside. The result is such that one's hand can be laid on motor block at all times without discomfort.

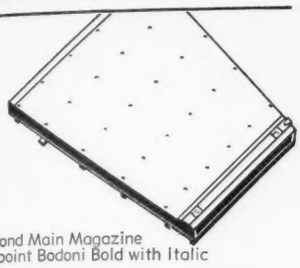


Suggested Head and Text Equipment for Model 30 Linotype



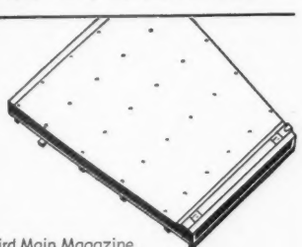
First Main Magazine
18 point Bodoni Bold with Italic

HOW is one 123
HOW is one 123



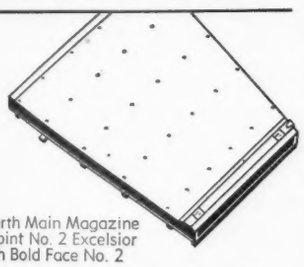
Second Main Magazine
12 point Bodoni Bold with Italic

HOW is one to as 123
HOW is one to as 123



Third Main Magazine
24 point Bodoni Bold Condensed

HOW is one 123



Fourth Main Magazine
7 point No. 2 Excelsior
with Bold Face No. 2

HOW is one to assess and 123
HOW is one to assess and 123

TRADE LINOTYPE MARK

Here's the Fast Way to Set Heads

THIS suggested Model 30 equipment illustrates some of the time-saving advantages of the Blue Streak 4-Magazine Mixer for setting newspaper heads. Just see the range of faces you can get on this machine! And see what you can do with them! For example:

You can drop from either a 36, 24 or 18 point main head to a 12 point subhead *instantly* . . . just by touching a button.

You can drop from 36 to 18 and then to 12 just as easily.

With the 18 point two-letter feature, you get both faces in one magazine instead of two.

With the six mold disk, you can set any face on the machine without changing liners.

And with all these seven display faces on the machine, you still have room for a body-face magazine so your head machine is always ready to fill in on body matter. Or this fourth magazine could be used for an additional display face.

Note that with the Quick-Mixing Key it becomes thoroughly practical to carry a full font of caps, lower case, figures and points in a pair of auxiliary magazines, shifting from caps to lower case with just a touch on a key . . . the same way you do on a typewriter. This means that you can carry two large display faces in the four auxiliary magazines. If you want even larger faces in the main magazines, your Model 30 could be an All-Display machine with four 72-channel main magazines . . . or a Two-in-One with two pairs of 72 and 90 channels each.

Ask your Linotype representative to show you how your own head-dress could be set on the Model 30.

Mergenthaler Linotype Company

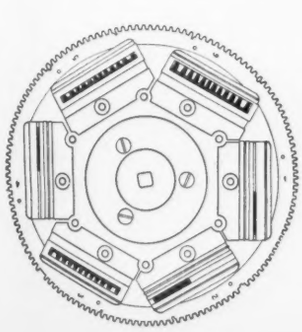
BROOKLYN, NEW YORK

NEW YORK CITY · SAN FRANCISCO · CHICAGO · NEW ORLEANS

CANADIAN LINOTYPE, LIMITED, TORONTO, CANADA

Representatives in the Principal Cities of the World

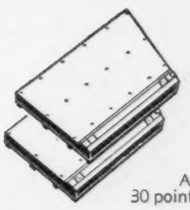
SET IN LINOTYPE BODONI FAMILY AND INDICATED FACES



Arrangement of 6-Mold Disk

1. 8 point — 1 column
2. 18 point — 1 column
3. 30 point — 2 columns
4. 12 point — 1 column
5. 24 point — 2 columns
6. 36 point — 2 columns

First and Second
Auxiliary Magazines
36 point Bodoni Bold



Third and Fourth
Auxiliary Magazines
30 point Bodoni Bold Italic

HOWi123 *HOW is 123*

Friendly Criticism

Enjoyed 1936 Equipment Number, from cover to cover; technical articles, research, ads and new developments most interesting to me. Suggest some space be devoted to large plants and problems.

Thomas E. Dalton, Production Manager,
International Magazine Company,
New York, New York.

McAvoy—Chief Engineer

The man responsible for the success of this, as well as the balance of electrical work is Frank A. McAvoy, an electrical engineer. He is aboard the train and will stay with it throughout the trip.

The illumination achieved in the train is excellent. Nowhere on the train does one encounter glare, yet all machines and moving parts from the critical printer's standpoint are well lighted.

Purpose of the Train

The purpose of the train is, of course, to provide display rooms which can be brought to the prospective customer as it is patently impractical (if not impossible) to take all prospects to the nearest city having an A.T.F. Branch for demonstrations.

Recognizing the fact that the "makers" of the equipment are the most logical men to best inform the prospect on the equipment he is interested in, A.T.F. obtained men from the manufacturers to travel on the train and do all demonstrating and answering of questions.

The immediate object of the train is the 100-day tour now in progress but A.T.F. officials intimate that the future will determine whether or not the train will be abandoned at the end of its 16,000 mile journey.

Low Chases for Cylinder Proof Presses

THE advent of power page proof presses in newspaper composing rooms has injected a problem into the proofing "industry" where type-high chases are used, when a page form in the type-high chase is being proofed on a cylinder proof press. Something happens to the nicely calculated pitch line between the impression cylinder and bearers so as to destroy the true rolling contact of the cylinder (about which is wrapped the sheet of proof paper) and the type form. This causes the paper to wrinkle at the lower end and perhaps along the sides a short distance upward from the bottom. It should be stated right here that in the average newspaper composing room the time element prevents changing the cylinder packing or fussing with the type worm when taking proofs of different sizes. The same cylinder packing is expected to serve for one column ads all the way up to full page size advertisements. Then, too, in most newspaper composing rooms there is always a scarcity of chases in the ad alley in which to compose page ads.

At the Cleveland *Press*, Composing Room Superintendent John B. Hogan has solved both problems by purchasing a quantity of lower-than-type-high chases in which page ads are composed and proofed. After corrections have been made, the standard type-high chases are substituted for the low ones prior to sending the forms to the stereotype department.

No doubt Mr. Hogan's plan of using the low chases will prove to be efficient inasmuch as the low chases can be confined to the ad alley area and to the further fact that in most newspaper composing rooms there is always a shortage of the regulation stereotype chases.

With reference to power page proof press cylinders mentioned above, R. O. Vandercook states newspaper stereotype chases should be about 0.003 in. less than type high to avoid wrinkling of full-page proof sheets. An additional safeguard to avoid sheet wrinkles is to cut away the impression cylinder packing to a width which is slightly greater than the type width in the page, but not of sufficient width to ride on the chase.

Orders 18 Auto-Pasters

It has been announced by the Wood Newspaper Machine Corporation, Plainfield, N. J., that the Philadelphia *Enquirer* has purchased eighteen full-speed, full-automatic Auto-Pasters to be installed in the *Enquirer* after the first of January.

Books Received

Handbook for Pressmen

A VALUABLE addition to printing's technical literature is the new "Handbook for Pressmen" written by Fred W. Hoch, well-known cost expert and practical pressman. The introduction to the book was written by Hon. A. E. Giegengack, U. S. Public Printer. The contents should be of great utility inasmuch as no successful pressman can possibly keep "in his head" all of the knowledge required in this highly technical and important branch of the printing industry.

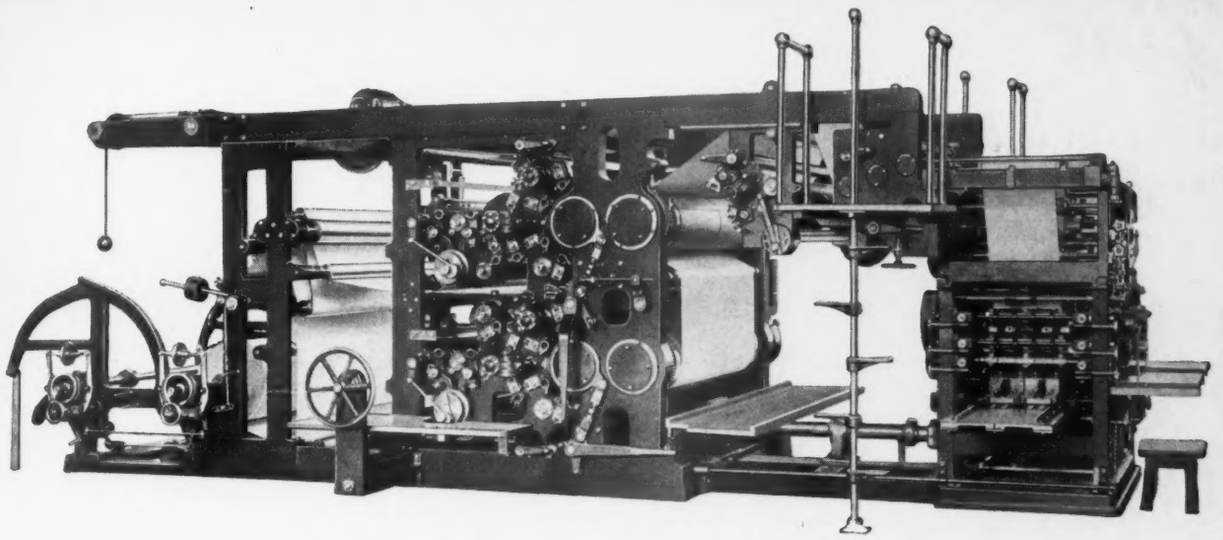
An impressive list of subjects make up the contents of the book and we know of no better way to apprise the reader of them than to print the chapter titles which are as follows:

Methods of Line-up
Presswork
Makeready for Platen Presses
Makeready for Cylinder Presses
Overlays and Makeready
Uniform Makeready Methods
Micrometer an Aid to Pressmen
Close Register
Printing Water Color Jobs
Two Colors on a One-Color Press
Setting the Rollers
Methods of Overcoming Offset
Work-ups, Cause and Remedy
Remedy for Presswork Wrinkles
Slurs, Their Cause and Remedy
Quality and Production
Repairing Plate Batters
Blocking Out with Borders
Patent Base Speeds Imprint Jobs
Printing On Cellophane
Details of Embossing
Hot-Plate Embossing and Paneling
Gum Label and Embossed Seal Printing
Die-Cutting Methods
Ink
Color Mixing and Matching
Metallic Inks
Dimensional Trade Expressions
Selecting Pressroom Equipment
New Processes Important
Printing Facsimile Letters
The Stencil Screen Process
Summary of Processes
Comparison of Processes
Cost and Production Analysis of Offset

Two of the important chapters in the book are: "Remedy for Presswork Wrinkles" and "Slurs, Their Cause and Remedy." We believe the author could have made the subject matter of these two chapters even more valuable if he had included diagrams and explanatory material bearing on the principle of cylinder press line of impression.

The plea for a scientific approach to presswork problems is a high note in the book. If every purchaser of the book will subscribe to the "method of approach" outlined by Mr. Hoch we are sure production will be improved both from a cost and maximum quality standpoint.

"Handbook for Pressmen," by *Fred W. Hoch*. Published by Fred W. Hoch Associates, Inc., New York. Contains 362 pages, 26 illustrations and 24 charts. Chapter and Topical Indexes. Bound in brown gold-stamped cloth. Size 6¼ in. by 9½ in. Price $3.00 per copy. Orders with remittances may be sent to *Printing* Equipment *Engineer*.



Combining speed and Cottrell reliability, this press, with a 46-inch cylinder circumference, operates continuously at 12,000 cylinder revolutions an hour.

TYPICAL RECENT Cottrell

MAGAZINE PRESS CONSTRUCTION

COTTRELL

Zinc

Halftones Cemented to Stereo Plates Printed from Direct

By W. W. Wever*

HERE at the Dayton *News*, among other things we have attempted, we are printing feature pages containing large halftone areas directly from zinc etchings inserted in the stereotype plate. While the scheme for printing directly from zinc etchings has its limitations so far as fast production is concerned, it has improved greatly the looks of the society and other feature pages of the *News*.

The plan for printing directly from combination stereotype and zinc plates comprehends the use of a special thin zinc (0.038 in. thick) formed after etching to the curvature of the stereotype plate.

The zinc plate is processed by the photoengraver in exactly similar manner to standard zinc plate stock, the only difference being that it is considerably thinner to facilitate forming to the curvature of the stereotype plate without distorting the printing surface of the engraving in any way.

The form for the page is prepared as follows: When the size of the illustration is known, the makeup man places solid flat stereotype base in the page form as usual. The base, however, is 0.880 in. high. There is no variation in makeup of the type matter which is to fill the balance of the page.

The made up page form containing the high base corresponding to the area of the special zinc halftones to be printed on the page and the halftone plates for that page are now sent to the stereotype department. The stereotyper lays the zinc etchings to one side and covers the cut base with one thickness of pink blotter (similar to the pink blotter used in making wet mats.) The form is then molded. The pink blotter is of sufficient thickness so that the area to be occupied by the zinc etchings in the stereotype plate will be deep enough to bring the etchings to the proper printing level in relation to the balance (or type portion) of the page, which in our plant is approx. 0.006 in. higher.

The plate and the special thin zinc etching are now taken to a work bench where the etching is curved by passing it through a tinner's bending machine. This consists of three steel rollers arranged pyramid fashion in a frame. The top roller is adjustable in relation to the two fixed rollers at the bottom for obtaining proper plate curvature.

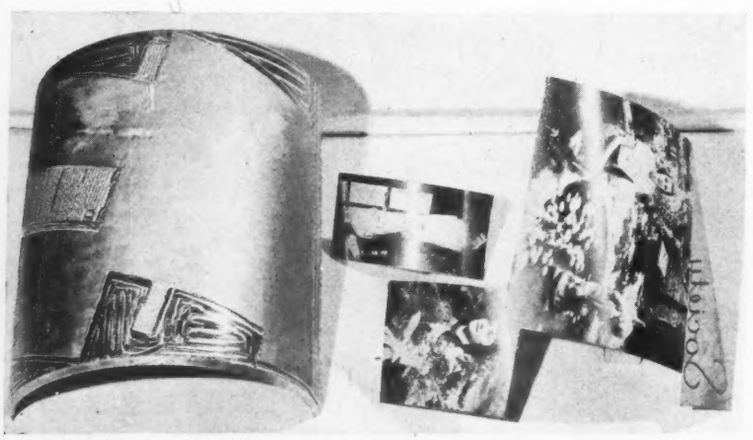
The zinc etching is laid in position on the blank portion of the stereotype plate. The curvature corresponding to the plate, the etching is then fastened in its recess with "Ilglue," a special cement which comes from Copenhagen.* This cement is furnished in stick or block form. It is necessary to melt it in a manner similar to sealing wax by holding one end over a candle flame to soften it. It is not necessary to cover the entire surface of the area to be occupied by the zinc etching—a dab here and there on the stereo plate being sufficient to fasten the etching securely.

While we have not experienced any difficulty with the cement failing to hold the zinc etching throughout the press run, yet we decided to have our photoengraver supply a flange ½ in. wide according to the size of the etching in two or three places along the edge.

After cementing the engraved etching, one flat-head brad is driven through flange and plate. As stated above, we have not experienced difficulty with zinc etchings tearing loose from the stereotype plate, but on one or two occasions the etchings did move circumferentially on the plate. Probably this was due to friction and perhaps to a slight softening of the cement. It is to prevent the latter movement that we adopted the plan of providing a few flanges for tacking the etching to the plate.

*Mechanical Superintendent, Dayton (O.) Daily *News*.

*Presse Illustrations, Bureau, Box 6, Copenhagen, Denmark.



Editor's Note:

MECHANICAL executives are striving to improve newspaper printing constantly. Those things which mar the appearance of the page are noticed and at least an attempt is made to eliminate imperfections which should not exist. It seems a trifle odd that considerable energy must be expended in some instances to do away with unsatisfactory appearance of newspaper page elements. It is this writer's belief, however, that the processes entering into newspaper manufacture would stand closer scrutiny to determine if they are the best that can be employed. He doesn't pretend to insist that some of the innovations introduced from time to time represent the final word but you will agree there is considerable to be desired in the way of producing a better looking newspaper page. This is sufficient urge for mechanical executives in general to endeavor to improve newspaper printing. If some one thing will improve the appearance of our newspapers, and it proves to be practical in a number of plants, perhaps mechanical executives as well as the equipment makers and suppliers who work unceasingly on many problems will be encouraged to see what they can do with it.

One of the chief ambitions of the average newspaper publisher is to improve the printing of newspaper halftones and to use halftone illustrations more freely because of their reader appeal. Many have worked on the plan to print directly from original engravers' halftone plates in combination with stereotype plates. In fact, mechanical executives in most newspaper plants use either halftone underlays or bumping-up methods to try to improve halftone printing.

Notwithstanding the ever-prevalent handicap of showthrough and/or strikethrough, newspaper printing has been improved tremendously in the last decade. Equipment makers and suppliers have contributed greatly in this advancement. Perhaps, after reading Mr. Wever's description about printing halftones direct on the press from the original zinc etchings you will speculate upon future possibilities. The editor will be pleased to print the opinions of mechanical executives in early issues of Printing Equipment Engineer.

When Ad Copy crowds you hard

LUDLOW is the Answer

● Worthy of its hire at any time, it is on days when the hook is crammed full that Ludlow proves its mettle most impressively.

Every working hour yields sixty productive minutes for the Ludlow compositor. He gathers flat matrices a number at a time, spaces them in the stick with surprising ease, and casts them in sluglines.

There is no prior cost for casting type or spaces, nor for case inspection or case laying. Matrices are returned to the Ludlow case as a part of the composing operation—yet composition is completed in actually less time than is required just to set single types.

LUDLOW TYPOGRAPH CO.
2032 Clybourn Avenue, Chicago, Illinois

Set in members of the Ludlow Karnak family

Color

Determination Reduced to Black And White Graph Curves

By Staff Writer

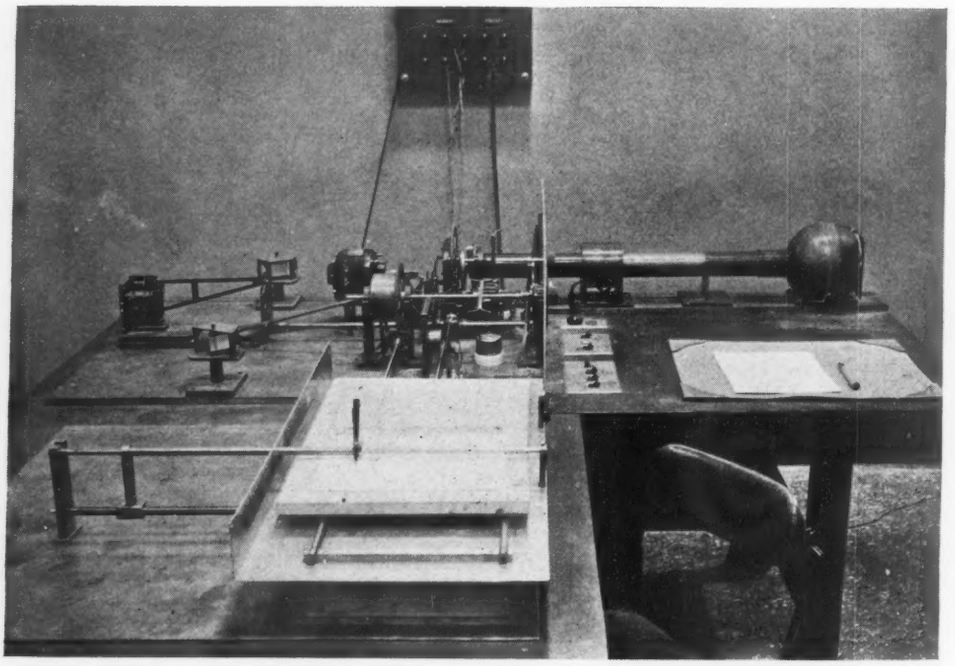
As a scientific means for matching and standardizing colors, a new automatic color analyzing machine has been developed. Reds, blues, greys, and greens, brilliant or dull, are reduced to plain black and white by this instrument for it mechanically translates any shade into a prosaic looking graph curve. This new tool of science is called the recording photoelectric spectrophotometer. It was invented by Prof. Arthur C. Hardy of the Massachusetts Institute of Technology. "Recording photoelectric spectrophotometer" is quite a mouthful, so laboratory men where the machine is in commercial service refer to it simply as the "Specter." In appearance, it resembles a large "U" shaped telescope. Its operation depends chiefly on the ability of the photoelectric cell to turn light waves into electrical energy, although it utilizes several less familiar principles of optics. In three minutes after a sample of any colored material is placed in it, the apparatus turns out a chart showing precisely how much of each wave length of light is reflected by the sample. Each color shade, (and there are millions of them) is thus represented by its own peculiar graph curve.

According to its users, the "Specter" promises to revolutionize color studies and have a far reaching effect in industries where color specification or measurement is required. Many designers, packagers, and advertisers, as well as manufacturers of inks, dyes, paints, paper and textiles are expected to adopt this new method of color analysis. The first commercial "Specter," which cost $5000, is in daily service at the Research Laboratories of the International Printing Ink Corp. where it is used for matching and standardizing ink.

Ordinary color names like "white," "red," "blue," and "brown" are too inexact for scientific color classification. For example, Herr Hitler's shirt and Joe Louis' skin are both called "brown." Yet the Fuehrer's shirt is a "tannish brown" while the famous Brown Bomber's complexion inclines towards the "blackish brown" shades. The "Specter" does away with the need for such inexact terms as "blackish brown" or "whitish blue." It distinguishes between the tiniest color varia-

(*Continued on Page* 37)

An IPI technician inspects one of the curves turned out by the "Specter." The apparatus is charting another curve on the graph roll shown near the center of the picture. Most of the mechanical details of the "Specter" are covered by a protective housing and are not visible. The optical devices used—lenses, prisms, light source—are enclosed in the U shaped metal shed which covers the top of the instrument. Samples to be analyzed are placed at the end of the tube at the right.



Here is the "Specter" laid bare, so to speak, with the housing removed to show certain of the construction details. The sphere at the right holds the standard and the sample to be analyzed. Light passes from the incandescent bulb shown near the center of the photograph through the first prism to the prism at the extreme left. Then it is reflected down through the other prism to the tube where it proceeds to the inner walls of the sphere, striking the sample and the standard. In the foreground, is the charting apparatus, impelled by the gearing system and the smaller motor. The photoelectric devices are inside the tube.

• FOR THE
• BEST
• ANTI-FRICTION
• BEARINGS

Hoe Searched the World

Indicative of the scrupulous consideration that attends every detail of the design and construction of Hoe Super-Production Printing Machinery is the "Hoe bearing policy" established only after a lengthy period of thorough research by Hoe Engineers.

An intensive study of all anti-friction bearings, and their suitability for the great variety of bearing functions on printing machinery, proved that no one make of anti-friction bearings is best for all the many varied functions which they must perform. Therefore, Hoe selected with scientific care for each application, that make and type of bearing which is outstandingly superior for the function performed.

This "bearing policy" costs us somewhat more, but it is your assurance of the fastest, smoothest and safest operation, maximum production, longest productive life, lowest maintenance cost and the finest quality of output.

R. HOE & Co., Inc.

• *General Offices* •
910 East 138th Street
(at East River)
• *New York City* •

BOSTON SAN FRANCISCO CHICAGO BIRMINGHAM

New Things for Progressive Printer

Hacker No. 4 Block Leveller

A new Block Leveller designed for premakeready of blocked printing plates is announced by Hacker Manufacturing Company. It is known as the No. 4 and has a capacity of 12 in. by 18 in. Manufacturer states the new machine is a greatly simplified and improved precision planer for obtaining type high accuracy in mounted plates—wood or metal. The working principle employed is that of end milling against revolving work.

Illustrating the new model Hacker Plate Levelling Machine which has a capacity of 12 in. by 18 in.

Patented clamps hold warped blocks neutral and flat blocks firmly down against the plate and table. The table is free-wheeling. Chips are vacuumed away from the work. Owing to its design and method of mounting in the machine, the cutter is always square. Instantaneous micrometer height adjustment is provided.

This new model Block Leveller is similar in construction to the smaller No. 3 model, but the new model has larger plate capacity. It is stated by the manufacturer that for plates larger than 9 in. by 15 in. or 12 in. by 18 in., a special tool for making large blocks out of small ones is available.

Heavy Duty Paper Drill

This Challenge Style E Heavy Duty Paper Drill has all the features of the Style C machine, plus added capacity and mechanical refinements. It has a new and larger black composition table, with a nickeled metal binding. Holes are provided at the back for holding extra hollow steel drills. An automatic block ejector is controlled by a knob beneath the table. An indicator snap switch operates the 1/3 h.p. motor. A suitable drawer is provided for tools and other accessories.

The Style E Challenge Paper Drill handles drills from 1/8 in. to 1/2 in. diam. and drills a clean, accurate, round hole through a ream of stock at a single stroke. A foot treadle draws the high-speed drill down through the stock, the table remaining stationary. The turret-guide principle of setting up for six holes (or more on special order) in as many positions in one operation has been retained. All moving parts are fully guarded. An improved Challenge Flexolite provides illumination.

Slitting, slotting, V-slotting and round cornering may be done on this machine. It is equipped to handle all classes of loose-leaf forms, cards, hinging, indexing, novelties, etc., either before or after jobs are padded.

View of Challenge Heavy Duty Paper Drill. It slits, slots, V-slots and round-corners.

The body of the machine is finished in olive green with mirrored-metal trim. The bands around the base and table are Chinese red. Knobs and table top are in black. The nameplate on front is in Chinese red and black.

Further infromation and prices are available on request to the manufacturer.

Willard Offset Press

A new offset printing press has been announced by the Willard Manufacturing Corporation. Sheet size of the press is 22 in. by 30 in.; transfer size (printing area) is 21¾ in. by 28 in.; plate size is 24½ in. by 30 in. and the blanket size is 26 in. by 30 in. Power required is ¾ h.p. with ½ h.p. for blower. Floor space is 60 in. by 96 in. overall and the weight is 6500 lbs. Speed is 6000 i.p.h. and for close register 4500 i.p.h.

The delivery is automatic receding and does not require special setting for different weights of stock. The feeder is of the reloading type.

The inker unit throws on and off automatically. When the press is printing the inker unit throws on automatically and when the press is not printing (or when sheet does not go through the press) the inker unit throws off automatically.

The cylinder pressure is thrown on and off automatically according to whether a sheet is passing through.

The feeder throws off with pressure.

By means of a hand wheel and calibrated scale, impression cylinder pressure can be adjusted from 0.0005 to 0.025 in. for changes in stock thicknesses.

(*Continued on Page 41*)

CLINE

Correlated Unit Drives, Reels, and Tensions...

Ordered by

THE NEW YORK NEWS

(When these are installed 40 High Speed Pasters will be in use by the News.)

THE INDIANAPOLIS STAR

THE YOUNGSTOWN VINDICATOR

High speed production depends on the perfect reciprocal relation of every operating unit of the equipment in use. The Cline System correlates the Cline Unit Press Drive, Cline Electric Tension and High Speed Paster with Press Control, insuring absolute coordination of press speed and web tension.

Cline correlated equipment consists of Press Drives, Quick Adjustment Reels, Automatic Electric Tensions, High Speed Pasters, Paper Break Detectors and Web Severing Devices.

The acceptance of Cline Equipment by The New York News, The Indianapolis Star, The Youngstown Vindicator and many other leading newspapers is ample evidence of Cline superiority.

CLINE ELECTRIC MFG. CO.

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CLINE SYSTEM — QUALITY NAME SERVICE FAME — CLINE ELECTRIC MFG. CO. CHICAGO — CLINE WESTINGHOUSE

Thanks, Mr. Conley

Congratulations to the mechanical and executive personnel for the marvelous job they did on the 1936 Reference Book. Everything that could be sought by the reader and asked for by the advertiser is there.

I extended to everyone in your organization my greetings and hope for your continued success.

L. H. Conley, Supt., Stereo Dept.,
New York *World-Telegram*.

Press Parts Catalogs

For the benefit of users of X Pattern, Straight Pattern and Z Pattern presses, R. Hoe & Company, 138th St. and East River, New York, N. Y., have distributed recently parts and service repair catalogs in newspaper plants where these three types of presses are being used. It is requested by the makers that if any users of these three types of Hoe presses have not received catalogs that a catalog for each particular type of press in use in the plant will be mailed upon request to mechanical executives.

The catalogs contain diagrammatical plates with parts numbers, instructions for ordering and considerable technical material of value to pressmen.

Catalogs covering Hoe Simplex, Super-Production, Vertical and Arched Type presses are being prepared and will be sent to those news paper plants in which these types of presses are operated.

Installs Ten New Units

In addition to 10 units already in operation at its Brooklyn plant, the New York *News* will soon install five more Goss Speedry Gravure Units and a pair of Folders. The Sunday edition is 2,848,811. The four-color tabloid Rotogravure Section is printed entirely on Goss Speedry Gravure Presses. The speed range is 30,000 to 45,000 copies per hour from one delivery. The New York *News* is said to have the largest modern high-speed newspaper rotogravure plant in the world.

Develops New Format

Gilbert P. Farrar, typographical consultant of American Type Founders, has recently been commissioned by the Los Angeles *Times* to develop a new and distinctive typographical format for that newspaper's exclusive use.

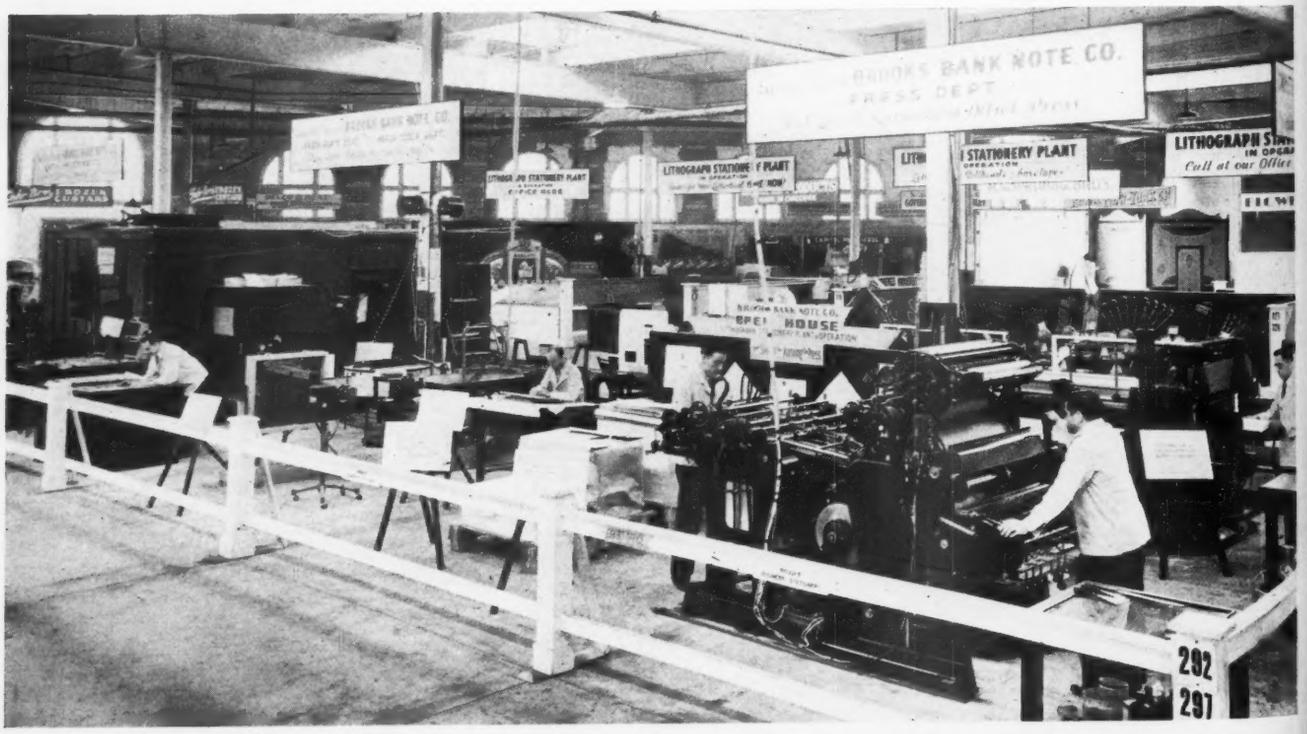
Teletypesetter Installation

In connection with the change to Excelsior type face, the Western Newspaper Union has ordered four Model 8 Linotypes equipped with Teletypesetters, and two of the machines already are in operation in its Chicago plant.

Open House to 300,000 at the Eastern States Exposition

For the first time in the history of the Eastern States Exposition, New England's Blue Ribbon show, an actual printing plant is shown in operation. Commercial jobs are turned out on schedule. With the cooperation of the Rutherford Machinery Company and the Fuchs & Lang Mfg. Co., Divisions of the General Printing Ink Corporation, the Brooks Bank Note Company has maintained a continuous chain of production. With signs to indicate the procedure of production, the public watched an artist plan the letterhead, a mechanical artist then took over the Photo-Lettering Machine, which produced a complete black and white reproduction of the artist's idea. The next step was to convert this to a film negative on a Process Camera. While all this was going on, press plates were being coated with a light sensitive solution in the Plate Whirler. When both the negative and plate were dry they were placed in the Vacuum Printing Frame and a short exposure made under an arc light. The zinc press plate was then inked and developed in water and placed on the High Speed Offset Job Press. This press (which with the foregoing equipment was produced by Rutherford) running at high speed produced in one form as many as five line and halftone subjects. Then the work was taken to the Seybold cutter and delivered to the customer.

The Fuchs & Lang Mfg. Co., who supplied the inks and supplies used in the operation of the Press, also had on display specimens of lithography and printing contributed by some of the leading printing and publishing houses. Full press sheets of varied color lithography, cartons, publication covers, tin cans, collapsible tubes and other items contributed to make a colorful display.



Runs of 100,000 to 2,500,000

in Full Color on Newsprint

Another Job Where G-E Press Drive and Control Provide Reliability, Smoothness, and Flexibility

FULL-color runs on newsprint pieces in quantities from 100,000 to 2,500,000 —on fast delivery—are the specialty of E. H. Dougherty & Co., Chicago. For this work the company relies on General Electric equipment for press drive and control on new and modern Duplex Unitubular presses.

The G-E system provides an ample selection of operating speeds, and smooth, highly satisfactory adjustments for slow-down and jogging operation. In this printing plant, as in hundreds of others, large and small, G-E equipment has proved that it is outstanding for dependability, ease of operation, and low upkeep. It will pay you to specify General Electric equipment for color, offset, rotogravure, magazine, newspaper, or job presses. Through a G-E office that is near you, you can get in touch with a G-E printing-equipment specialist who will assist you in obtaining the correct electric equipment for your plant. General Electric, Schenectady, New York.

G-E full-automatic printing-press controller on Duplex Unitubular press provides smooth and flexible control for color-job runs in the E. H. Dougherty & Co. plant

020-294

GENERAL ELECTRIC

Errors

Their Causes and Cost in Newspaper Composition Analyzed

By CHARLES H. STOUT*

IN THE first installment of this article it was pointed out that more than 25% of all newspaper composing room time goes into the detection and correction of errors. All of this 25% is not chargeable to typographical errors, but if we assume that they are responsible for the whole error cost in the same ratio that they bear to the total errors, then the majority of the 25% belongs to them. On this basis more than 15% of all composing room time goes into the detection and correction of typographical errors alone.

Perhaps it is unfair to charge typographical errors with their full occurrence ratio of the cost of proofreading because logically it may be held that the proofs will still have to be read. If we concede that point and do not charge any proofreading cost to typographical errors we will find that approximately 10% of all printers' time is consumed solely in the correction of typographical errors. Thus it becomes apparent that a 60% reduction in these errors certainly would represent a substantial saving.

It is well known, of course, that proofreaders are not checking proofs merely to find typographical errors. They are also reading for errors of fact and errors in style, punctuation, grammar, and in the division of words. For the purpose of definition these may be classified as educational errors. The number of such errors which a composing room's proofreaders mark naturally varies a great deal more than typographical errors, depending upon the standards of the individual newspaper. On the average approximately two of these educational errors are marked in each 100 lines of composition. Hence, such errors occur much less frequently than typographical errors.

Even some of these errors which are classified as educational, especially those in punctuation, oftentimes actually are typographical errors. In its surveys, the Matrix Contrast Corporation also classifies the omission of a word or phrase as an educational error. This, too, is a doubtful classification, because in many such cases the operator would notice the error if he could read his matrix reference marks easily.

In mechanical circles there recently has been some discussion of the part which style errors play. It has been suggested that a standard style should be established which would be acceptable to a majority of newspapers and which news services could use. Such a step undoubtedly would help to reduce the number of style errors. But since many of these errors are in the capitalization of words, the all-capital-letter copy as received over the present news service printer machines would not be of any help in eliminating capitalization errors. It would still be necessary for copyreaders to mark up the capitals or for the line-composing machine operators to know and to utilize the correct capitalization style.

In order to reap the fullest possible benefit from the general adoption of a standard style, it would be imperative to enlarge the range of news service printer machines to include the complete upper- and lower-case alphabets.

If it is impractical to change these printers to include both upper- and lower-case letters, there is one beneficial change which it would be practical to make. There is no apparent reason why the lower-case alphabet could not be substituted for the present upper-case. The advantages of such a change are obvious and at least two-fold. First of all, it is an accepted fact that lower-case is much easier to read. The copyreader can edit it more easily and more accurately and the line-composing machine operator can follow it with greater ease. Second, and of greater importance is the prevention of style errors, the copyreader would be much more apt to mark up capitalization, because the lack of capitalization would be apparent at a glance. This is not true of all-upper-case copy where all letters in all words are already capitalized. All-lower-case copy would be a decided improvement.

Even without either of these changes in the printer machine, the adoption of a standard style would aid materially in the reduction of style errors, particularly if the rules are simplified so as to be clearly understandable to all persons handling copy and proofs. It is quite unlikely that all newspapers could be induced to adopt the same style, but a large number of them probably would. Obviously the general acceptance of a simple standard would, in many cases, eliminate the necessity for a news or composing room employee to learn a new style when he transfers from one job to another. This would save many style errors.

The more simplified the rules of a style, the more apt they are to be interpreted uniformly. Many newspapers with set styles are handicapped because the rules are too vague and cumbersome and when this is the case there naturally are differences of opinion among the copyreaders and among the proofreaders as to what rules apply in specific instances. This not only causes a larger loss of time in the setting of style corrections but it also means that there has been a failure to attain the consistency which the drawing of the rules anticipated. Simplicity should be the watchword in establishing any news style.

It seems, oftentimes, that proofreaders feel compelled to find some kind of error to mark and that when they can find nothing else they start inserting or deleting commas. There are instances, of course, where commas alter the meaning of a sentence. But unless they do affect the meaning definitely they should not be marked in news composition. Certainly few readers ever notice comma errors, and it doesn't seem reasonable for newspapers working under today's close deadlines even to attempt to correct mistakes in the punctuation of news with the same fidelity that is adhered to in other classes of printing where there is more latitude in time schedules.

As far as errors in grammar are concerned, they may have been overlooked by the copyreader or they may have been made by the line-composing machine operator. In those plants where it is the office rule for the operator to follow copy no matter whether he thinks it right or wrong, he is obliged to repeat such errors from copy. The best way to reduce grammatical errors is to exercise greater care in editing.

Errors made in the division of words are entirely the fault of the operator. He can improve his divisions only by the study of the syllabic construction of words.

(*Continued on Page 47*)

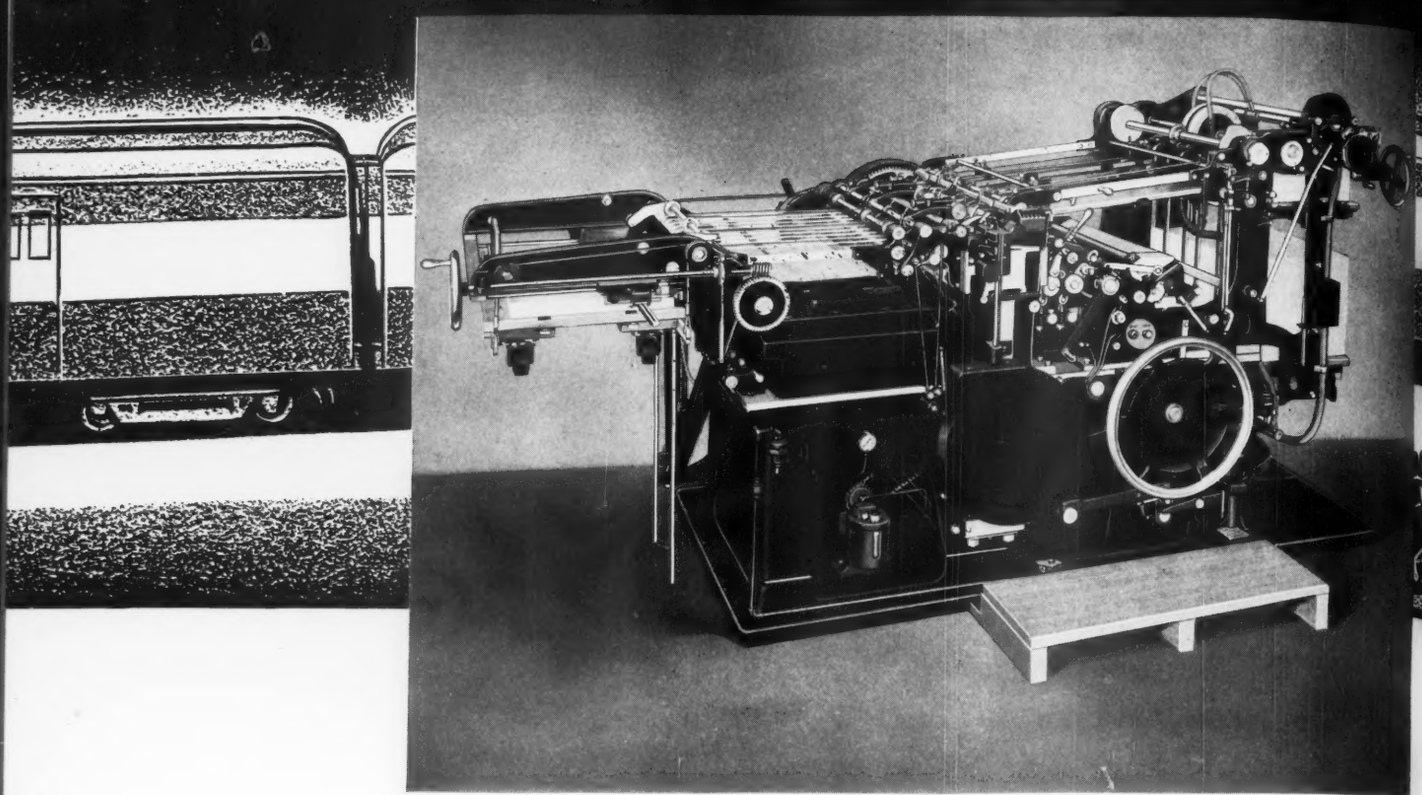
*This is the second and concluding installment of an article written by Mr. Stout, Vice President of the Matrix Contrast Corporation, New York, N. Y.

Thousands have visited the

PRINTERS PROGRESS SPECIAL

PARTIAL SCHEDULE • MORE CITIES TO COME

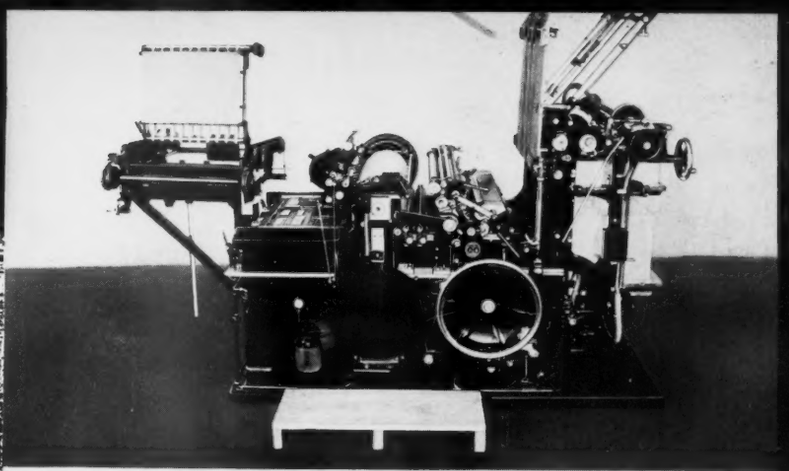
	OCT.		OCT.		NOV.
Chicago	16-17	Boise	30	San Diego	12
Milwaukee	19	Spokane	31	Phoenix	13
St. Paul	20		NOV.	El Paso	14
Minneapolis	21	Seattle	2	San Antonio	16
Des Moines	22	Portland	3	Houston	17
Omaha	23	Sacramento	4	Dallas	18
Kansas City	24	Oakland	5	Ft. Worth	19
Wichita	26	San Francisco	6	Oklahoma City	20
Denver	28	Del Monte	7-9	Memphis	21
Salt Lake City	29	Los Angeles	10-11	New Orleans	23



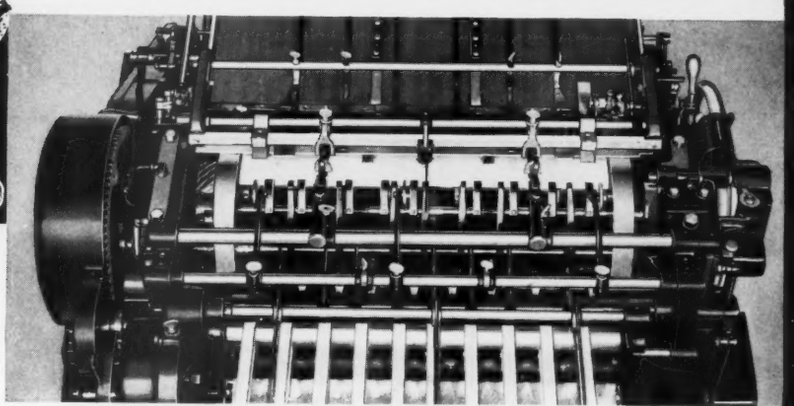
New design . . . *New* speed . . . *and* HIGH QPA!

• Thousands of printers saw this press running on the Printers Progress Special. Thousands more will see it . . . and the great display of modern printing equipment, much of it under power . . . brought together by American Type Founders and other leading suppliers. Don't fail to see it!

• Keen interest in the New ATF 17x22 Kelly centers on the features that increase quality production. Time-eating chores of the pressman have either been speeded up or eliminated altogether. Top speed of 4200 an hour, perfected ink distribution and accuracy of register are additional features in which you'll be interested. See the New ATF 17x22 Kelly under power on the Printers Progress Special. Ask your ATF Salesman!



● **ACCESSIBILITY.** Tapes swing up, delivery swings back, plenty of room at form. Inking mechanism opens wide, fountain roller comes out, easy wash-ups. Feed board swings up, plenty of room at cylinder.



● **ACCURATE REGISTER.** Unfailing tumbler gripper action takes sheet in register position at varying speeds, and at top speed for the job.

QPA

means Quality Production Average . . . the average hourly production of well-printed sheets you can expect and get from a press. QPA is the true measure of press profit possibilities.

● High QPA depends on: (1) Speedy Makeready; (2) Accuracy of Register; (3) Quality of Impression; (4) Ample Distribution.

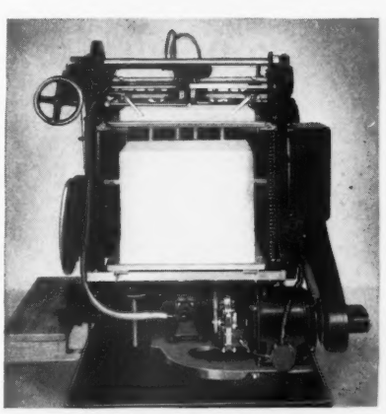
● Press time is your profit time. Every moment your pressman can save in makeready, corrections and wash-ups can be turned into productive hours . . . and the New ATF 17x22 Kelly is easily accessible.

● Positive, hair-line register at higher speeds . . . is your assurance of fast production of quality color work.

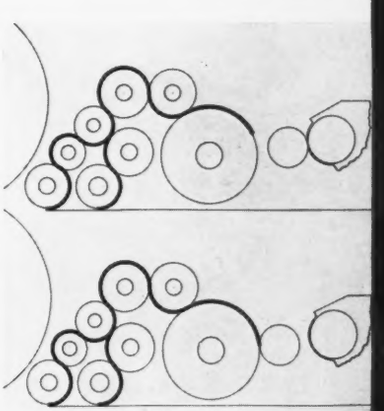
● The New ATF 17x22 Kelly gives a solid, even impression as high as 300 pounds per lineal inch . . . and the massive column, tracks and bed are built to withstand continuous usage over long periods of time.

● For high quality printing, the New Pyramid Inking System gives ample supply of worked-up ink at all speeds. Each form roller has individual supply and covers full 17x22 form before reversing.

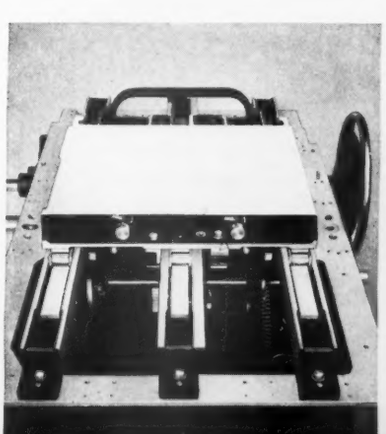
● These are only a few of the features of the New ATF 17x22 Kelly . . . there are others that add up to the High QPA of this modern press. Ask your ATF Salesman for details.

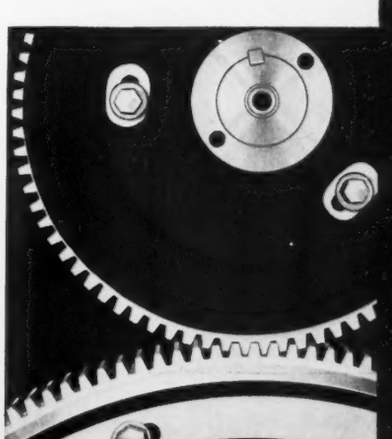


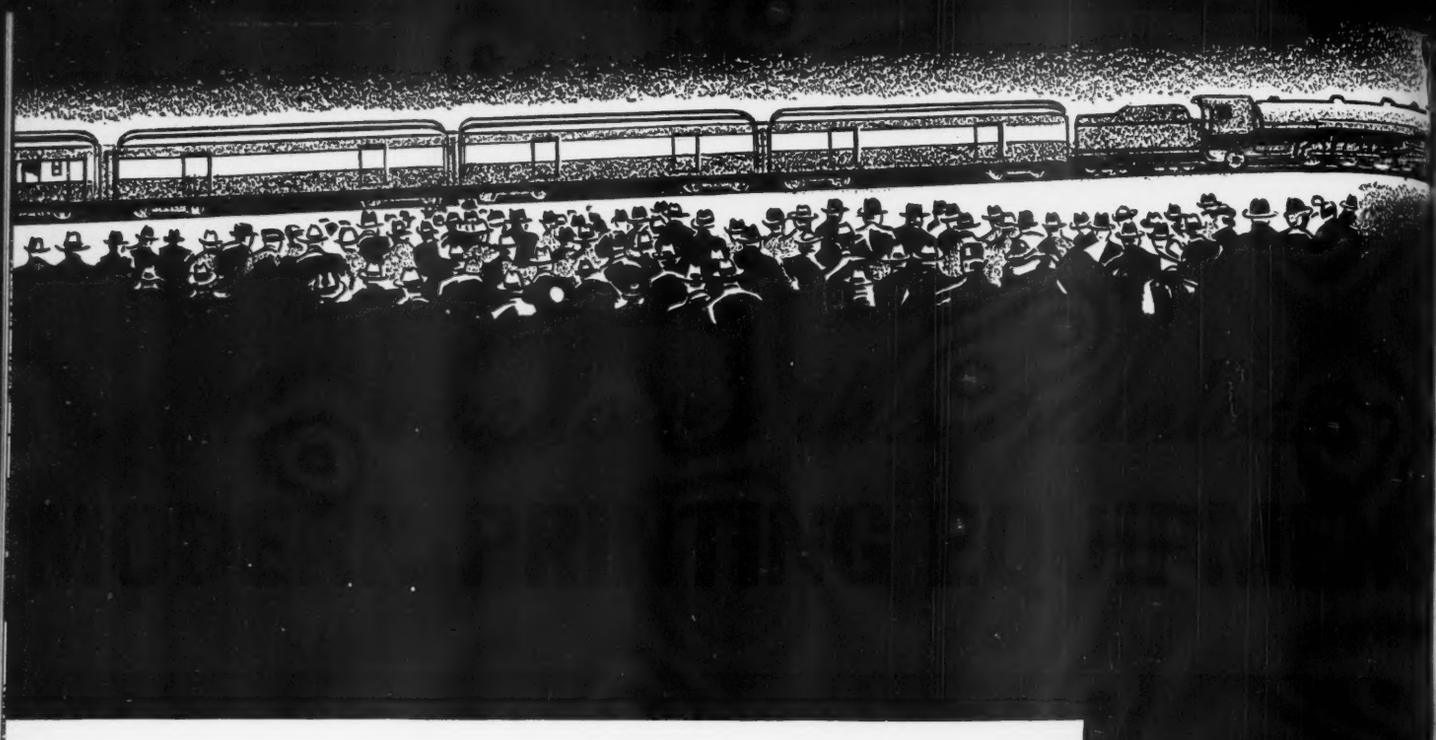
● **RELOADING FEED TABLE.** Twenty seconds to change to new pile.



● **DISTRIBUTION.** New Pyramid Inking System. Covers full 17x22 form.







• The Printers Progress Special is packed to the guards with the latest equipment of the progressive manufacturers listed below. Each display will show you, right on the spot, how you can cut costs, increase your production and improve quality . . . how you can save time and money. Watch for the date in your city! Admission by card only. Here are the suppliers who helped make it possible:

Acme Staple Company
CAMDEN, N. J.

American Numbering Mach. Co.
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Boston Wire Stitcher Co.
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Challenge Machinery Co.
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Stereotype Equipment Co.
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Wetter Numbering Mach. Co.
BROOKLYN, N. Y.

AMERICAN TYPE FOUNDERS

Branches and Selling Agents in Twenty-five Cities

Lighting

For Printing Plant Improved by Detailed Engineering Study

V Progress Report*

CAN the printer do more and better work under good lighting than he can under poor lighting, and is his work enough faster and better to pay for the increased cost? In answer to this, it can be readily proved that the eye does not see objects as quickly or as accurately under poor lighting as it does under good lighting. Thus lighting becomes a factor not only in production but in safety, especially in any occupation having to do with rapidly moving machinery.

At a series of meetings, proof sheets of six-point type, containing six common errors such as omitted letters, transposed letters, etc., were distributed to approximately 200 printers who were asked to proofread the copy under an illumination of 8 foot-candles.

The same persons were then given the same proof sheets with the same number and types of errors, but not the same errors, and asked to proofread the copy under an illumination of 50 foot-candles, a level more nearly adequate for the task. Five minutes, ample for the job, was allowed in each case. An average of 35 per cent more errors were discovered under the good lighting as compared with the poor lighting.

It is often asserted that the time required for make-ready compared with the productive time of the press tells the story of either profit or loss. It seems that on so many jobs the time required for make-ready is out of all proportion to the estimated cost. Observed cases of lost time and errors attributable to poor lighting: Time taken by the pressman to run back and forth from the press to the window to inspect his work, time taken to unplug drop cords from one receptacle and to plug into others, time taken to drag drop cords in under the press to work on the ink fountain, ink rollers, etc., inability to see work-ups in the form, inability to see vernier on side guide, errors in register, inability to see dirty cuts on the bed of the press, inability to detect poor distribution, of ink, etc. The same is true in the composing rooms, and at the linotype machines; not the same cases, of course, but similar ones.

The table shows the installation cost of high efficiency lighting compared with the investment in presses, linotype machines, etc., also the operating and fixed charges of this lighting reduced to an hourly basis compared with the operating and fixed charges of the machines. These figures assume that the printer rents his floor space at ninety cents a square foot per year, taking an average figure for space, current in a typical printing district. In examining these figures it should be borne in mind that even poor light costs money. It is generally considered that the poorest illumination found in industrial establishments costs about one-half of the best lighting, although the modern job may produce several times the illumination given by the outworn system. This is because of the high efficiency of modern lighting equipment and lamps, compared with the out-of-date material. Therefore, where the table indicates an hourly lighting cost of from ½ cent per hour up to 5¼ cents per hour, it should be kept in mind that the increased cost of the lighting over an ordinary poor grade of illumination is perhaps only half of the figures given in the table.

There does not seem to be a good argument against spending these few cents per day per man to give that man the best in lighting. If a man's time is charged, say, at 90 cents per hour, or 1½ cents per minute, he has only to gain 2 or 3 minutes per day to pay for the good lighting. This study would indicate that in the composing room and make-ready on the press, a man might gain not merely 2 or 3 minutes a day, but more likely from 20 to 30 minutes per day by relighting, to say nothing of the saving to his eyes, saving in paper stock, ink, and other supplies.

In conclusion, it should be said that this study of lighting as related to printing is far from complete.

Illumination in the Printing Industry

Installation and operating costs of high-efficiency lighting compared with certain fixed and operating charges of printing plant equipment

A	B	C	D	E	F
Classification of Printing Plant Equipment	Initial Cost of New Printing Plant Equipment Installed Per Machine	Initial Cost of High-Efficiency Lighting Installed Per Machine	Estimated Fixed and Operating Cost of Printing Plant Equipment Reduced to Hourly Basis Per Machine	Estimated Fixed and Operating Cost of High-Efficiency Lighting Reduced to Hourly Basis Per Machine	Ratio of E/D
					per cent
Linotype Machine...	$3,100.00	$90.00†	$2.53	$0.03	1.18
Hand Composition..	$530.00	$30.00	$2.26	$0.016	0.71
Imposing Table.....	$360.00	$30.00	$2.22	$0.016	0.71
Flat Bed 2-rev. Cylinder Press 51" x 74" (No. 7/0).....	$18,000.00	$189.00	$3.22	$0.052	1.61
17½" x 22" Offset Press automatic feed	$5,100.00	$101.00	$1.91	$0.025	1.31
Platen Press, hand feed 12" x 18"	$709.00	$21.00	$1.40	$0.005	0.35
Proofreading	$15.00	$18.00	$2.23	$0.018	0.81

†Includes figure for redecorating and ceiling-over between rafters with acoustic material.

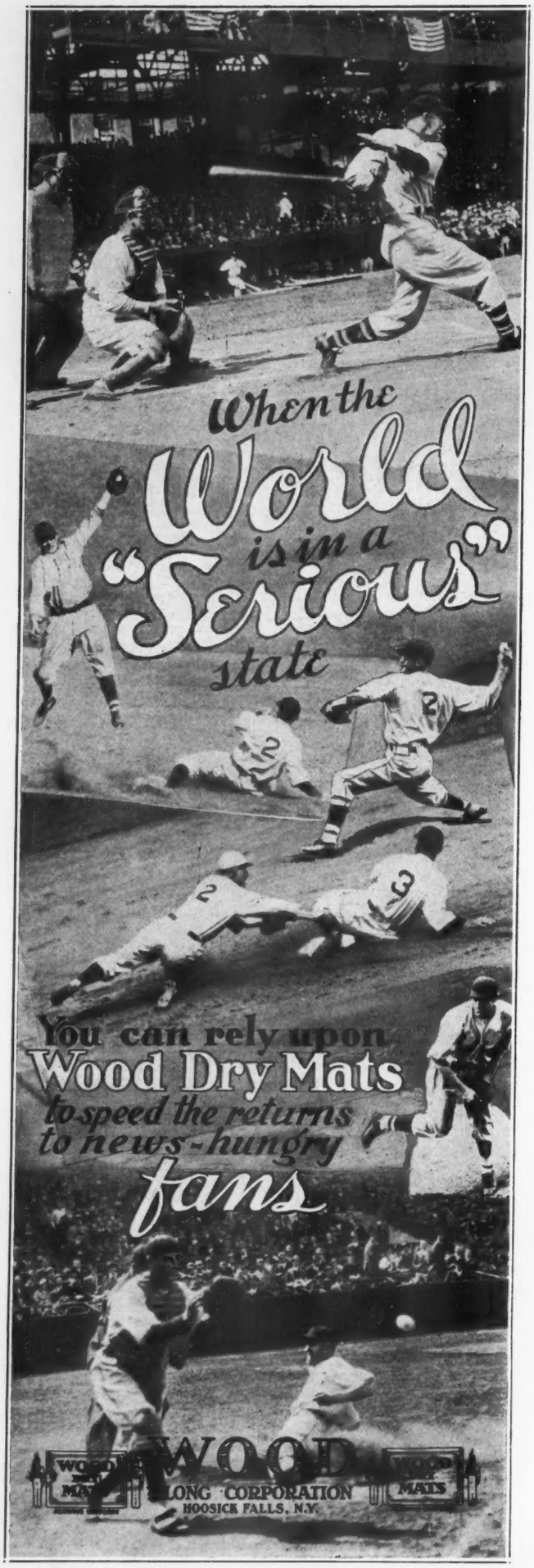
Probably such a study can never be finished, inasmuch as the printing business is constantly on the move. On the other hand, regardless of progress and change in the printing business, there are certain fixed fundamental laws of light and sight. It is hoped that by inference, at least, some of these laws have been engrossed on the readers' memory, and that they will remain in mind while dealing with the problems enumerated in this article, as well as many others that have perforce been omitted.

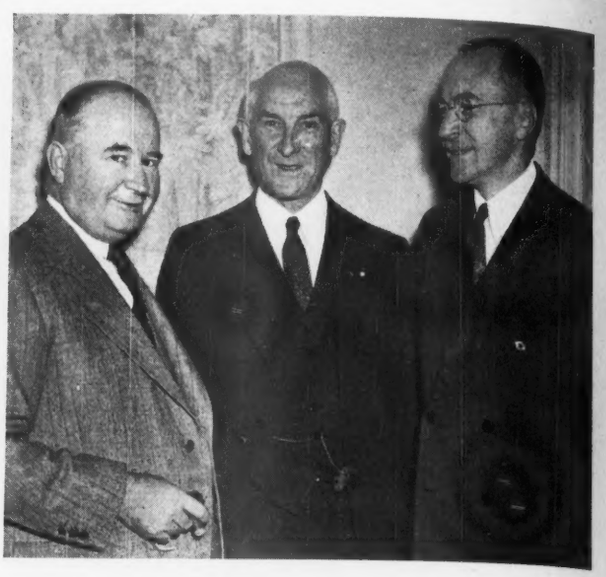
*This is the fifth and concluding installment of a report which was submitted by the Committee on Industrial and School Lighting of the Illuminating Engineering Society, March, 1936.

Miller Co. Busy

At the first meeting of the Board of Directors of the Miller Printing Machinery Company since reorganization, the following officers were elected: W. G. Montgomery, President and Treasurer; Gordon Montgomery, Executive Vice President; D. J. Casey, Vice President; T. R. Foster, Secretary; J. F. Clarke, Assistant Treasurer.

W. G. Montgomery reported at the Directors Meeting that the Company's sales curve has been steadily mounting since 1933, being 69% above that year in 1934, and for 1936 is 284% above the comparable period of 1933 and that unfilled orders on hand will keep the Company's plant operating at full capacity, day and night, for at least six months. He also reported that additional land has been purchased for plant expansion and that considerable new equipment has been added to the present plant to help cope with the demands for the Company's new line of single and two-color automatics.





Joseph T. Mackey, Mergenthaler Linotype Company; Jas. E. Bennet, Secretary, and T. R. Jones, Acting President, National Printing Equipment Association, at annual meeting of that organization held in Cincinnati, September 29.

Report

Made to Equipment Men on Promotion to Increase Use of Printing

By Staff Writer

THE annual meeting of the National Printing Equipment Association was called to order by Acting President T. R. Jones, on Tuesday, September 29, at the Netherland Plaza Hotel in Cincinnati. The most important subject for the organization was the consideration of the report by Harvey D. Best, Chairman of the Committee to Promote an Increase in Printing. In Mr. Best's report it was revealed that the organization had spent about ten thousand dollars in making a survey of the printing industry. This survey was made with the aid of experienced research workers. The complete report covers eighty-four typewritten pages. The information contained therein, however, is being kept in the hands of the Committee for the present.

The Committee of the National Printing Equipment Association has been particularly concerned with means and methods of increasing the use of printing. It was revealed in this report that to make any sort of headway approximately $125,000 would have to be spent the first year in promoting the use of printing.

During the meeting of the Association the members heard Frank H. Smith, Ex-President of the United Typothetae of America, explain the Research Institute which has just been incorporated by United Typothetae of America. Mr. Smith stressed the importance of co-operation of all the various branches of the Graphic Arts Institute. He stated that the United Typothetae would ask the support of the Craftsmen's Association, paper and ink men and the equipment manufacturers in

(*Continued on Page 54*)

WE REPEAT

Above: 10-TON KEMP STEREOTYPE POT

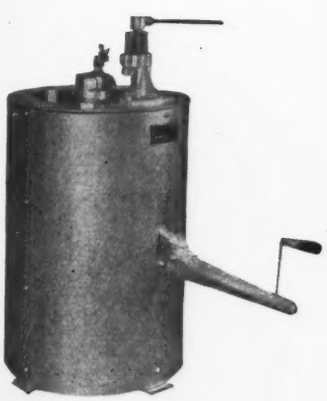
"Efficiency knows no size"

TWO years ago last June, Kemp of Baltimore said in these pages: "Efficiency knows no size . . . mark it down in your note book, write it on the wall, fix it in your mind . . . KEMP SAVES".

All that we said then we repeat, *plus.* Kemp Immersion Melting is today doing bigger jobs and smaller jobs than it was two years ago . . . and doing these jobs equally well.

And no matter how large or how small your metal melting job may be, Kemp still guarantees to cut fuel 40 percent. Here's how that guarantee works: we will put in the equipment you need, give you 30 days to judge its efficiency, and then if you don't want it, if it doesn't save 40 percent, we take it back and you never get a bill.

You might ask one of the publishers who uses this newer, faster, cheaper method of metal melting . . . there are nearly three times as many of them today as in June of '34. Then write, wire or phone **The C. M. Kemp Mfg. Co., 405 E. Oliver St., Baltimore, Md. Telephone Vernon 1166.**



At Left: 1-TON KEMP REMELT POT

KEMP of BALTIMORE

Responsibility

THE PLANE DISPATCHER in his tower above the airport is responsible for the safety of every plane leaving or arriving at that flying field. He tells each plane when and where to land—when and where to take off. This dispatcher is held responsible for those planes because of his control over them.

In the same way Imperial controls the type metal in the plants of Imperial users. The Plus Plan keeps accurate check on the condition of the working supply of metal. The analysis of that metal and the balancing is controlled by the Plus Plan.

Since the responsibility should rest with the control, Imperial should be responsible for the metal's performance. That is why, when the first pound of Imperial Type Metal enters your shop, Imperial voluntarily assumes the unconditional responsibility for that metal's performance.

Imperial

IMPERIAL TYPE METAL COMPANY

PHILADELPHIA • NEW YORK • LOS ANGELES • CHICAGO

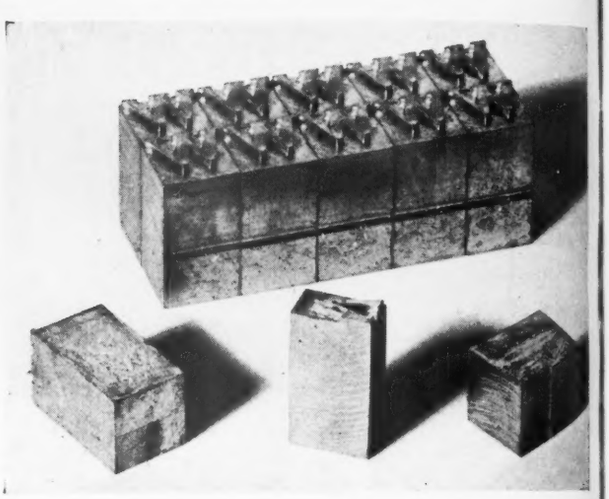
Production Value of Solid Type

By James C. McIntosh

IT IS not necessary to mention the many advantages resulting from solid, well-cast type, but the disadvantages of hollow type are so numerous it may be well worth while to enumerate some of the causes and to establish the point that hollow type can be eliminated at meager cost.

The common causes of hollow type on the Monotype are worn pump bodies, pistons, levers, bearings and defective piston springs. The most serious cause, however, lies in ill-fitting pump bodies and pistons. Frequently it is the case that a new pump and piston are ruined before a single cast is delivered from them. A rather common cause of ill fitting pumps and pistons is the use of emery cloth on the piston in attempting to secure a good fit. Nothing could be more harmful because the operator has no control over the amount taken off a piston. In all probability he will get the piston out of round, or will take off too much or have a loose fit, and then the trouble really starts.

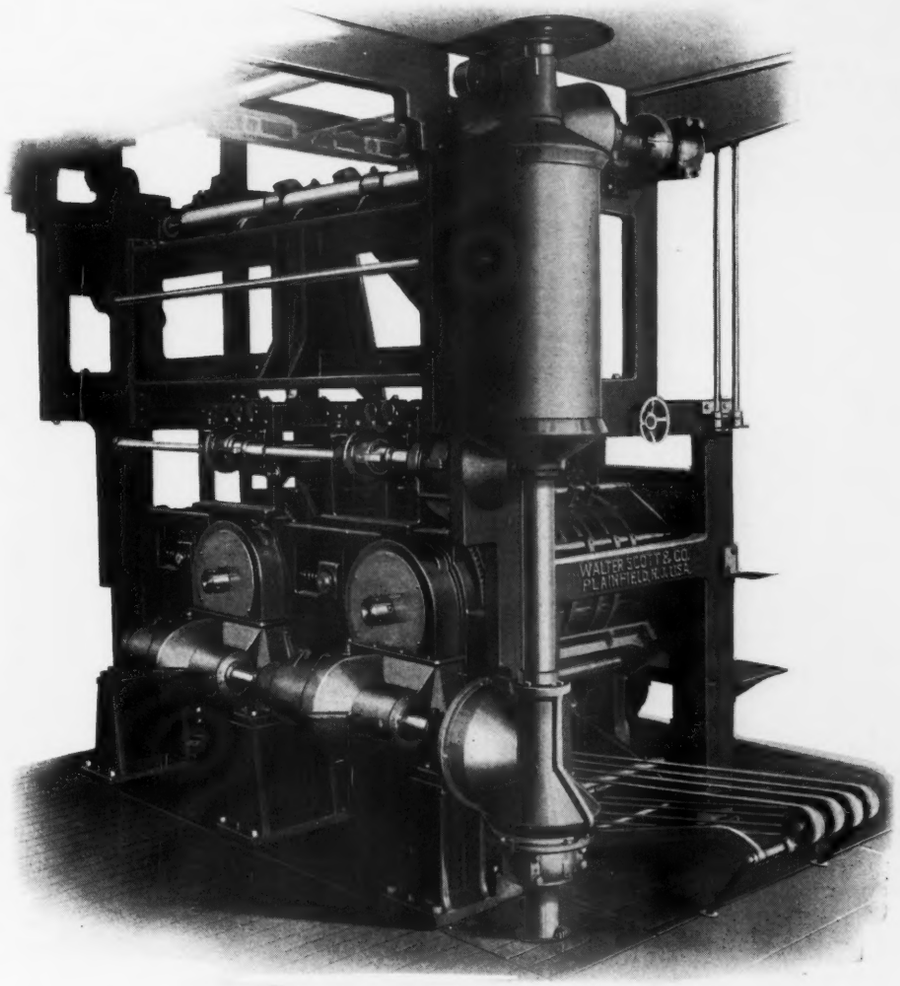
When consideration is given to the fact that the pump and piston are submerged in a metal pot heated to a temperature varying from 700 deg. to 750 deg. F., is it not fair to assume that these parts will wear much quicker than parts not subjected to such excessive heat? Therefore, it is most important that they fit snugly.



Photographic reproduction of type cast on a Monotype having standard pumping equipment properly fitted. The specimens shown are Cap W, 36-point Cheltenham Bold, which characters are 36 points square, the largest character that can be cast from standard equipment. Note the solidity of the characters as shown by sawing the type in half, both lengthwise and through the center. There are no air holes in either of the sectioned type bodies. This type will stand up under most severe conditions, not excepting stereotype dry mat molding. The block of ten Cheltenham Cap W types shown above weighed 10½ oz., and were cast on a Monotype caster which has been in operation over 10 years. These specimen types illustrate the production value of properly fitted pumps.

A practical method of securing a good fit (one which will keep the pump well and piston round) is as follows: After securing a pump and piston that fit tight, place a small quantity of fine lapping compound on the piston. After placing the pump in a vise, insert the piston and rotate it a few turns, roundwise in the well; use a wrench if necessary, until you can just feel it begin to free a little. The "feel" should not be loose, but should be very snug. Now work the piston up and down in the pump a few times. Remove the piston and wipe off all lapping compound to stop any further cutting

SCOTT HEAVY DUTY 3 to 2 RATIO
60,000 per hour Folders



Rear or Drive View of Folder showing totally enclosed gears running in constant oil bath and showing latest ball and roller bearing drive.

The finest, fastest, greatest capacity Folder built. Handles up to 96 pages at full speed. Equipped with patented Scott Safety Gates and patented Expansion Bands.

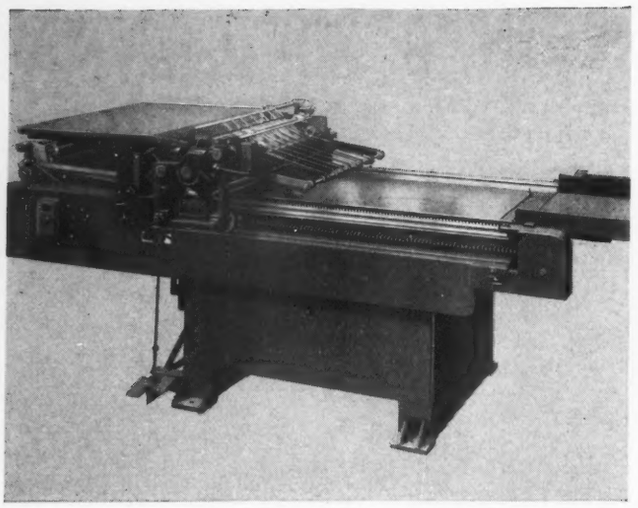
The most modern and safest Folder.

WALTER SCOTT & CO.

Plainfield, New Jersey

New York Office
230 West 41st Street

Office Chicago
1330 Monadnock Block



VANDERCOOK Proof Presses No. 325A and No. 22 afford a production combination in the proving department that has no equal for quality or speed.

VANDERCOOK No. 325A Power Proof Press will print 1000 full newspaper pages an hour. It will meet the demands for an unusual number of proofs without hampering production. No. 325A helps reduce errors to a minimum and eliminates consequent misunderstanding by affording clear readable proofs.

VANDERCOOK No. 22 Electric Proof Press will print type and plates in galleys at the rate of 40 proofs a minute. The construction of the No. 22 permits rapid galley change, and facilitates feeding. It offers the fastest present method of obtaining GOOD proofs from type and plates in galleys.

YOUR REQUEST will bring prices, size range, and complete information on the proof presses listed, or any other of the 25 sizes and models. Write.

VANDERCOOK & SONS
908 N. Kilpatrick Ave., Chicago · 216 E. 45th St., New York

action. Wipe out the well of the pump. The pump and piston should now be fitted perfectly.

The pump and piston levers and bearings should be examined. If any signs of wear are apparent, they should be replaced. These parts function in a vitally important way in that they control the timing of the injection of the metal into the mold. Should they be worn, the injection of metal will be late in entering the mold, and hollow type will result.

The piston spring should have sufficient compression to insure a full cast. After the mold blade has opened and the matrix has been seated upon the mold, the casting chamber or mold cell will be practically air tight. A strong compression on the piston spring, however, will overcome the resistance or cushioning effect of this air-tight condition.

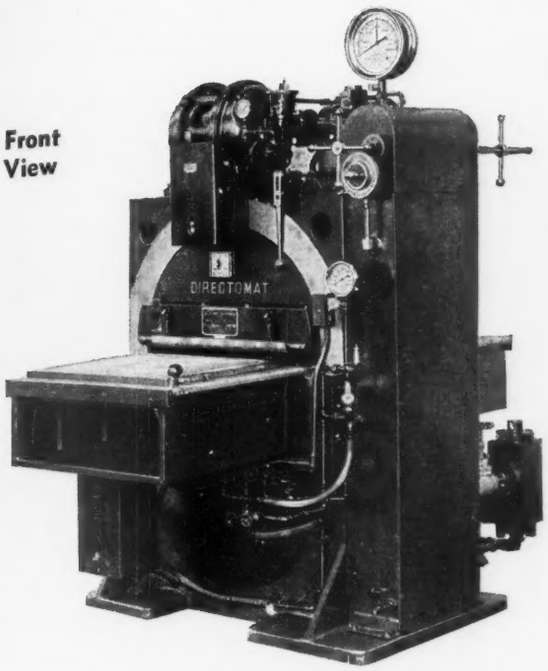
The expense of maintaining a casting machine in good condition is small indeed, considering the time saved in the composing room and the press makeready time which would otherwise be spent in changing bad letters. The cost of necessary parts is cheap insurance against costly delays in both the composing and pressrooms and in the case of a newspaper, the stereotyper's time will be conserved.

In order to comprehend the importance of maintaining the pump mechanism in relation to the casting of solid type, it is well to have a clear mental picture of its action. The pump mechanism supplies an adequate amount of metal to the pump body through a vacuum action which is described as follows: Through the impetus created by its cooperating spring, the piston depresses the float valve to the bottom of the pump as soon as the piston starts on the downward stroke, forcing the flow of metal over the top of the float valve and out through the throat of the pump and upwardly through the nozzle into the mold. As soon as the injection of metal has been presented to the mold and the piston starts its upstroke, the float valve follows it up until it strikes the valve seat; then the further upward movement of the piston creates a vacuum in the piston chamber underneath the piston. As the piston continues its upward movement the holes in the pump and in the piston come into alignment and the vacuum pulls the metal from the metal pot into the pump well. Now, if there is excessive wear in the pump or the piston, or both, there can be no vacuum created, hence a hollow cast will follow owing to the loose relationship between the wall of the pump well and the piston.

Most Comprehensive

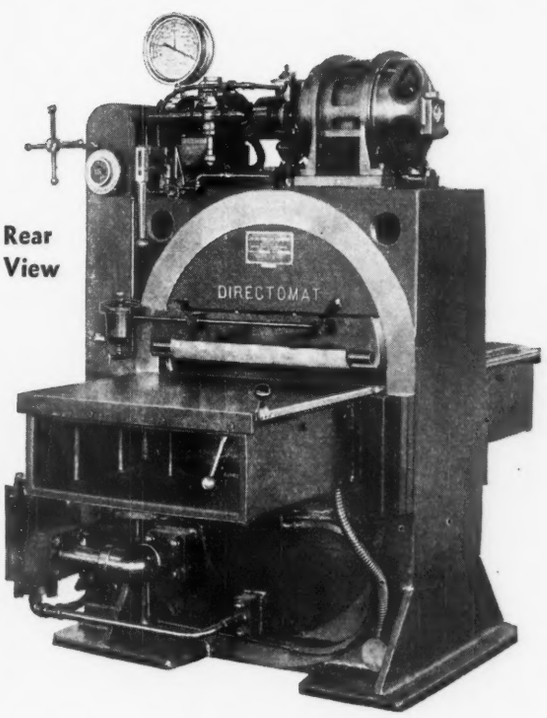
While much of your reference book has to do with job and color work, neither of which interests us, it is most comprehensive. The new binder makes every page lie flat—a great advantage; the index is complete and valuable. The query post card is an excellent idea. We do not see how you could improve on the job you have done.

G. W. Kent, Pressroom Foreman,
The *Day* Publishing Company,
New London, Conn.



Front View

The DIRECTOMAT HYDRAULIC MATRIX PRESS



Rear View

Better Ads Produce Bigger Profits

Users of DIRECTOMAT Matrix Presses have the pleasing assurance that the appearance of their newspaper will meet the requirements of the most exacting advertisers, thus creating a preference for their paper and influencing greater linage. They are in the enviable position of selling more than mere space. They sell quality advertisements—and know they can deliver them, not only in black-and-white but also in color.

The old days are gone forever when advertisers used to complain about poorly printed illustrations, lost letters or the like. The DIRECTOMAT System has banished all such complaints and the costly refunds and re-runs resulting therefrom. It consistently assures good pictures, clear and accurate in every detail, and distinctive display matter, sharp and uniform in every letter.

Whereas under roller moulding every kern of italic type in the form is invariably broken, the DIRECTOMAT System has made possible almost unrestricted use of this very attractive kind of type which hitherto, for practical reasons, has been taboo for any but special use. Italics of full-kerning design, graceful swashes and other faces, considered too delicate for general use before the advent of the DIRECTOMAT, can now be freely used.

Advertisers are not only willing but glad to buy more space when they are sure of the attractive, well-printed kind of advertisement made possible by the DIRECTOMAT. The progressiveness of DIRECTOMAT users is therefore deservedly rewarded in the form of greater linage.

Even more tangible are the mechanical advantages of the DIRECTOMAT. Let us send you complete facts about the many profit-making features of the DIRECTOMAT.

●

LAKE ERIE STEREOTYPE EQUIPMENT CORPORATION

Division of Lake Erie Engineering Corp. **Kenmore Station, Buffalo, N. Y.**

Pick-up your phone ...and We pick-up your Shipment

...that is all that need be done to have your shipment, large or small — shipped swiftly, safely and economically **anywhere** by Railway Express. Prompt pick-up by a swift motor vehicle, "hurry-up" service on fast passenger trains, and speedy delivery to destination. Railway Express' 57,263 skilled employees and 23,000 offices are ready for instant action when you pick up your 'phone. Free insurance up to $50 covers every shipment and additional liability costs only 10 cents per $100 valuation. For service or information telephone the nearest Railway Express Agent.

RAILWAY EXPRESS
AGENCY INC.
NATION-WIDE RAIL-AIR SERVICE

Snappy, Crisp Colors In Offset Lithography?

By ADAM HENRY REISER

MANY of the most prominent minds concede that offset lithography has been instrumental in the improvement of the processes and equipment used in the letterpress industry. It is contended that the accuracy developed by offset press builders has been instrumental in accelerating the inventive ingenuity of engineers in the relief printing press field. This has resulted in finer form and plate preparation methods and processes and finer presses on which makeready is cut considerably and in some cases eliminated entirely. But letterpress has contributed to the advancement of offset lithography, also. Typographers are continuously calling attention to the flatness of litho prints. As a result, efforts have been and are being made to overcome this effect. Men like Victor Ernst of Cleveland, have worked on the photographic end. Mr. Ernst has evolved the Lenticular Screen which is said to aid in producing snappy, contrasty prints. Others have worked on the press plate itself and as a result we have the deep-etch plate. While probably the main factor in its increased use lies in the longer press life of such a plate, there is that additional factor of greater ink transfer to the sheet because of the deeper ink well of the intaglio image.

Another element which has contributed to greater ink depth or color concentration is that of ink improvement. There is no doubt but that the offset inks of today are far advanced over the early offset inks. But when the ink-maker gets through with his job (and we'll all agree that he does a creditable piece of work) the lithographic pressman improves upon it. He cannot run the ink straight from the can. He adds driers, reducers, a touch of this and a touch of that; all of which take their toll in effectiveness of the covering qualities. He is forced to take these steps because of the variables in the stock and other things beyond his control. Then, added to all of this, is the emulsification that sets in with the action of the water on the ink. This in turn creates a flat appearance, especially when the water gets beyond the pressman's control.

But now, out of England, comes word of an auxiliary device which when added to the offset press makes it possible to take the ink directly from the ink tin and use it just as the ink-maker compounds it. Higher quality lithographing with greater ink strength is said to be possible with this far-reaching improvement. Like some other great forward strides, one wonders why this device had never been thought of before, the underlying principle is that simple.

This device, perfected by A. Schlesinger, seems to resemble a miniature ink mill. It consists of a number of special rollers revolving at high speed, an agitator and a special duct. Through these means the stiff ink is broken down by friction and heat. You know, even by hand, stiff inks become pliable when worked on the ink slab with an ink knife.

After the ink is broken down and reaches the press-plate, less water is employed than is ordinarily the case. This is readily accepted when it is remembered how harmfully driers and reducers affect the press-plate. It is said driers and reducers are not necessary when the Schlesinger device is not used on the offset press.

Even though the ink has not been reduced, plucking does not exist on papers until the softest of newsprint is attempted. Then a slight reduction of the ink is necessary. Set-off is absent even though driers are not

used and the body of ink transferred to the stock is a bit heavier than usual.

Work printed in three colors with the aid of this device cannot be duplicated in ordinary photo-litho plates under regular conditions in less than six colors. An improvement on ordinary photogravure work was effected in one color as against the usual duo-tone lithographing employed to ape gravure printing. A 200-line screen job was lithographed with ease, showing a clarity and crispness that was amazing.

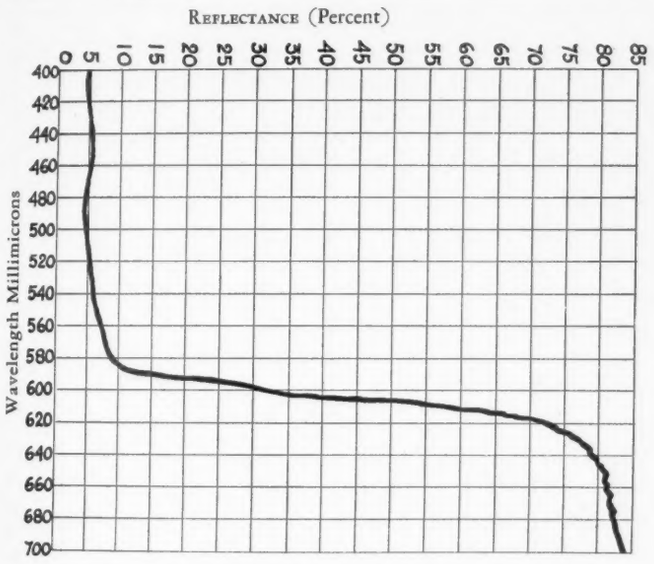
When this development achieves its aim, another sales-talk point against lithographic offset will have been removed. Letterpress probably will have introduced, in the meantime, several short cuts of its own, thus forging another link in the chain of progress.

Color

(*Continued from Page* 22)

tions and represents them, not by names, but by curves on graph paper. Like the familiar moonbeams, every little lightbeam (of color) has a meaning all its own, and the "Specter" plots it accordingly.

Now colors can be easily and accurately matched by comparing the "Specter" curve characteristics. Representatives of a national advertiser recently met with chemists from an ink company to decide what shade of blue should be used on the advertiser's packages. Not a color sample was in sight. The men studied graphs



Here is a sample color analysis turned out by the "Specter." This prosaic-looking chart represents the characteristics of a red ink used for printing a toothpaste carton.

from the spectrophotometer. After an examination of the various curves, one was picked as representing the shade most suitable for the package. They had selected it without even looking at actual colors.

"Specter" curves are valuable as permanent color standards, for unlike color samples, they will never fade or vary in any way. Certain advertisers, it is stated, have asked IPI to chart their package colors on the "Specter" and then file the curves for future reference whenever a question of variation from the standard arises.

Prices in the U. S. and Canada

50c per large tube; $5 per dozen tubes; $4 per dozen tubes in gross lots.

Stand-A-Lone Holders 2 for 25c, $1 per doz.

AVOID THIS HAZARD

Cuts and bases may be assembled in proper position when the compositor has finished a display ad, but unless cuts are fastened to their bases, they may be lost or shift on the bases before the form is passed to the stereotyper. Booth's Zink Cut Cement holds all kinds of cuts to wood or metal base with bulldog tenacity.

BOOTH'S KEYBOARD ROLLS

For line-casting machines are of constant diameter from end to end. These rolls are resilient to insure good cam action. Booth's Rolls are colored green and you may specify either crepe finish or corrugated tread at the time of purchase.

$1.30 per pair; $7 per dozen; 55c each in lots of 100.

The E. A. Booth Rubber Co.
364 Rockefeller Bldg. Cleveland, Ohio

A fast-etching metal that laughs at . . . *long press runs*

A SUCCESSFUL printing accomplishment—a 550,000 direct run from an original A-Z Alloy cut! And, the last proof is just as sharp and clear as the first. As a matter of fact, this A-Z Alloy cut could start the job all over again.

This tough metal looks and feels like zinc, but it wears like alloy steel. Here, certainly, is the cure for many a printer's headache. Use A-Z Alloy and give the printer the break he deserves.

Leading metal distributors in the United States, Canada and England now carry stocks of this metal.

A-Z ELECTRIC ALLOY

The Tough Brother of the Well Known Zomo Electric Zinc

Both Made by the Electric Induction Process

Patent Papers:

Printed copies of patents are furnished by the United States Patent Office at 10 cents each. Address the Commissioner of Patents, Washington, D.C., and enclose 10 cents for each patent paper wanted.

Patents

Composing Machine Patents Active—Abstracts Represent Variety

AUGUST-SEPTEMBER

Composing Machines:

2,051,803. TYPOGRAPHICAL COMPOSING MACHINE. William Ackerman, Towners, N. Y., assignor to Mergenthaler Linotype Company, a corporation of New York. Original application March 22, 1929, Serial No. 349,240. Divided and this application April 23, 1935, Serial No. 18,116. 20 Claims. (Cl. 199—18.)

1. In a typographical machine, the combination of a channeled magazine containing a font or set of matrices, escapements controlling the release of the matrices from the magazine, a series of power-operated escapement actuating reeds divided into groups, a keyboard comprising a series of manually operated finger keys, and intermediate code devices controlled from the finger keys of the keyboard for establishing a series of different combinations to control the operation of the individual reeds in one group or another in effecting the release of the matrices in the associated magazine channels.

2,051,804. TYPOGRAPHICAL SLUG CASTING MACHINE. Christian Augustus Albrecht, Berlin, Germany, assignor to Mergenthaler Linotype Company, Brooklyn, N. Y. Application February 14, 1934, Serial No. 711,119. In Germany February 17, 1933. 45 Claims. (Cl. 199—50.)

1. In a typographical slug casting machine, the combination with a pair of jaws between which a composed line is clamped, a rod reciprocable to move the jaws towards and from each other and means for selectively coupling the line-clamping jaws with the rod, of a primary locking device for maintaining the rod in its normal position of rest and adapted to be thrown into and out of action at will and a secondary normally active locking device for the rod adapted to be released by a periodically operated member of the machine during each operative cycle.

2,051,805. TYPOGRAPHICAL SLUG CASTING MACHINE. Christian Augustus Albrecht, Berlin, Germany, assignor to Mergenthaler Linotype Company, Brooklyn, N. Y. Application November 28, 1934, Serial No. 755,127. In Germany December 22, 1933. 12 Claims. (Cl. 199—50.)

1. In a typographical slug casting machine, the combination with a pair of jaws between which a composed line of matrices and spacebands is clamped and a jaw-actuating rod adjustable to close the jaws on to a composed line, of a toothed sleeve on the jaw-actuating rod, a pinion meshing with the toothed sleeve operable to effect a supplemental adjustment of the rod to tighten the jaws against a line after the jaws have been closed thereon, and means operable to adjust the sleeve axially on the rod to vary the angular position of the pinion relatively to a given jaw-closing adjustment of the rod.

2,052,090. MATRIX HANDLING DEVICE. Jose Midulla Flores, Tampa, Fla. Application July 23, 1934, Serial No. 736,596. 14 Claims. (Cl. 199—41.)

1. A device comprising a primary distributor bar provided with a channel in its lower side formed on its facing sides with longitudinal teeth, matrices having teeth on their lateral edges engaging with the longitudinal teeth, chutes into which the matrices are selectively dropped from discontinuous portions of the longitudinal teeth, longitudinal feeding means at the lower ends of the chutes, secondary distributor bars in conjunction with the feeding means, the secondary distributor bars having second longitudinal teeth, the matrices having toothed notches in their upper ends engaging the second longitudinal teeth, and magazines into which the matrices drop from the secondary distributor bars as discontinuous portions of the second longitudinal teeth are reached by the matrices.

2,052,378. REMOVABLE RING FOR MOLD WHEELS. George Ross Bacon, Towanda, Pa. Application October 31, 1935, Serial No. 47,710. 2 Claims. (Cl. 199—55.)

1. The method of forming a combined mold disk and gear ring consisting in casting a disk body with a plurality of spaced radially extending projections having beads on their outer ends, forming a steel gear ring with gear teeth on the outer surface and with a smooth inner surface having an annular groove, shrinking the steel ring on the ends of the projections so that the beads will rest on the groove, and then applying a pin so that it will connect the ring and one of the projections for locking the ring against accidental independent movement.

2,053,022. PAPER GUIDE. Ralph H. Corswandt, Chicago, and Walter J. Zenner, Des Plaines, Ill., assignor to Teletype Corporation, Chicago, Ill., a corporation of Delaware. Application January 12, 1935, Serial No. 1,448. 8 Claims. (Cl. 242—76.)

1. In a container, means for pivotally supporting a roll of web material, an opening in the periphery of the container through which the free end of a roll is emanated, and a guide element leading from the opening tangentially to the roll for preventing the overrunning of loose end accumulation within the container in a direction peripherally beyond the opening.

2,053,232. LINE CASTING MACHINE. Le Roy W. Willis, Stamford, Conn., assignor to Intertype Corporation, Brooklyn, N. Y., a corporation of New York. Application February 24, 1936, Serial No. 65,495. 20 Claims. (Cl. 199—57.)

1. In or for a line-casting machine, a slug casting mold having a member therein one face of which defines a portion of at least one of the longitudinal walls of the casting cavity thereof, and the edges of which are adapted to form a portion of the front and back faces of the mold adjacent to the cavity, the members being reciprocable in a direction transverse to the longitudinal extent of the casting cavity and within the limits of the front and back faces of the mold.

2,053,240. SLUG CASTING MACHINE. Herman R. Freund, Brooklyn, N. Y., assignor to Intertype Corporation, Brooklyn, N. Y., a corporation of New York. Application March 10, 1936, Serial No. 68,108. 19 Claims. (Cl. 199—59.)

1. In a slug casting machine having a mold disk movable forwardly from a normal position at two periods during a cycle of operation of the machine, means for advancing the disk at each period, and means for limiting such advance of the disk at one of the periods to an amount less than the advance at the other period.

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2,052,461. WEB CUT-OFF MECHANISM. Henry B. Greenwood, Glenarm, Md., assignor to F. X. Hooper Company, Inc., Glenarm, Md., a corporation of Maryland. Application April 27, 1935, Serial No. 18,500. 18 Claims. (Cl. 164—68.)

1. In a cutoff mechanism, a rotary driving gear, a cutter, rotary means coaxial with the gear, driving the cutter from the gear to move in successive cutting cycles, means for feeding a continuous web to the cutter which moves in the direction of feed at the instant of cutting, means for changing the speed of such gear relatively to the feed to change the length of cutting and means for adjusting the speed of the cutter at the instant of cutting to the speed of the paper, comprising an eccentrically adjustable rotating member eccentrically connected on one side of its axis to the gear and on the other side of its axis to the rotary means, the member rotating coaxially with the gear at medium cuts and being adjustable radially in opposite directions from the coaxial position, the adjustment in one direction serving to increase and in the other direction serving to decrease the speed of the cutter in its cycle at the instant of cutting.

2,052,519. APPARATUS FOR SEVERING SHEETS. Frederick O. Smith, Brooklyn, N. Y., assignor of one-half to A. Stirling Smith, New York, N. Y. Application July 7, 1933, Serial No. 679,289. 5 Claims. (Cl. 164—60.)

1. A sheet cutter comprising two laterally spaced pairs of opposed cutting knives, mounted on shafts, through which the sheets are fed, a deflector at the rear side of the knives starting above the path of the sheets and extending therebelow and being positioned opposite the space between the knives, a stripper between the deflector and the lower knife shaft and extending both forward and backward from the point of severance, a bracket-strap fastening the stripper and deflector together, the bracket-strap extending sideways from the stripper and from the deflector before bridging across.

2,052,526. SHEET FEEDING OR TRANSFERRING APPARATUS. Albert Broadmeyer, Harrisburg, Pa., assignor to W. O. Hickok Manufacturing Company, Harrisburg, Pa., a corporation of Pennsylvania. Application September 26, 1931, Serial No. 565,390. 22 Claims. (Cl. 271—45.)

1. In an apparatus, the combination with a plurality of sheet moving devices, of means for causing one to be inactive unless the other is active, and means for causing a sheet to engage the moving devices in succession and be moved by both simultaneously.

2,052,632. SHEET SEPARATING. Rudolf Klemm, Leipzig-Plagwitz, Germany, assignor to Gebruder Brehmer, Leipzig-Plagwitz, Germany, a German firm. Application June 15, 1931, Serial No. 544,622. In Germany November 11, 1930. 30 Claims. (Cl. 271—32.)

1. Automatic sheet-separating apparatus comprising a stack container, a movable wall forming part of the stack container and provided with a slot transverse to its direction of travel, means for moving the wall so that the slot therein passes across the upper and lower edges of the sheet to be separated from the stack, means for registering the slot with one edge of the sheet, means for bending the sheet edge outwardly through the slot, and means for holding the sheet edge substantially immovable while the wall is moved to complete the separation of the sheet from the stack.

2,043,056. PRINTING MACHINE. Emil L. Mueller, Rutherford, N. J. Application July 28, 1933, Serial No. 682,541. 10 Claims. (Cl. 101—269.)

1. In a printing machine, the combination with a printing roll of a printing roll carriage mounted to travel back and forth between two positions along a suitable bed and having bed engaging means effective to cause rotation of the roll in opposite directions during the back and forth travel of the roll, a motor mounted on the carriage and driving connections between the motor and the roll and a reversing switch for the motor to cause the roll to travel back and forth along the bed, of means comprised in the driving connections providing a period of rest for the roll following the beginning of operation of the motor to move the roll in at least one direction along the bed.

Miscellaneous:

2,042,465. PROCESS FOR DEINKING PAPER PRINTED WITH OXIDIZABLE INKS. Pierre R. Hines, Portland, Oreg. No Drawing. Application September 30, 1935, Serial No. 42,881. 8 Claims. (Cl. 92—20.)

1. The process of deinking paper imprinted with an ink having an oxidizing oil constituent which consists in shredding the paper, dissolving out its size constituent by a suitable liquor, removing the liquor, then maintaining the shreds in loose condition and moist with a weak alkaline solution and exposed to the air until brown spots appear on the shreds, then again covering the shreds with a weak alkaline solution and so as to exclude further direct contact with the air, until particles of ink carried by a sample of the shreds may be readily detached by slight brushing, then defiberizing the shreds and removing the ink particles by any convenient further treatment.

2,043,154. METHOD OF MAKING PRINTING ROLLERS. Samuel F. Damm, Niagara Falls, N. Y. Application March 20, 1935, Serial No. 11,990. 3 Claims. (Cl. 101—401.1.)

1. A method of making printing rollers, comprising cutting individual designs from a supply sheet, preparing a roller having an outer corrugated sleeve, marking upon the corrugations the contour of the individual designs, routing the corrugations to the depth required to bring the printing surface of the design pattern coincident with the printing circumference of the roller, and placing and securing the designs in the recesses.

2,043,309. METALLIC PRINTING PROCESS. Melvin Stone, New York, N. Y. Application December 31, 1934. Serial No. 760,039. 18 Claims. (Cl. 41—26.)

1. A printing process for reproducing the likeness of metallic objects on paper, comprising printing a silhouette of the object in a uniform metallic lustre, and surprinting thereon a halftone using a lustreless substance, of the same color as the silhouette.

2,043,397. INK THINNER OR VEHICLE. Charles P. Shaw, Detroit, Mich., assignor to Detroit Moulding Corporation, Detroit, Mich. No Drawing. Original application July 28, 1933, Serial No. 682,628. Divided and this application June 15, 1934, Serial No. 730,754. 1 Claim. (Cl. 134—56.)

An ink thinner or vehicle comprising 15.9% castor oil, 22.1% lithographic varnish, 26.6% stearine, and 35.4% turpentine.

2,043,554. CUTTING OFF MECHANISM FOR TUBE AND BAG MAKING MACHINERY. Adolph Potdevin, Garden City, Long Island, N. Y., assignor to Potdevin Machine Company, Brooklyn, N. Y., a corporation of New York. Application March 30, 1934, Serial No. 718,153. 3 Claims. (Cl. 93—33.)

1. Cut-off mechanism for bag and tube making machines comprising in combination a relatively thin fixed plate in the path of the tubular material being handled and disposed so as to be telescoped thereby, a movable member out of the plane of one face of the plate, a fixed knife out of the plane of the other face of the fixed plate, the movable member being

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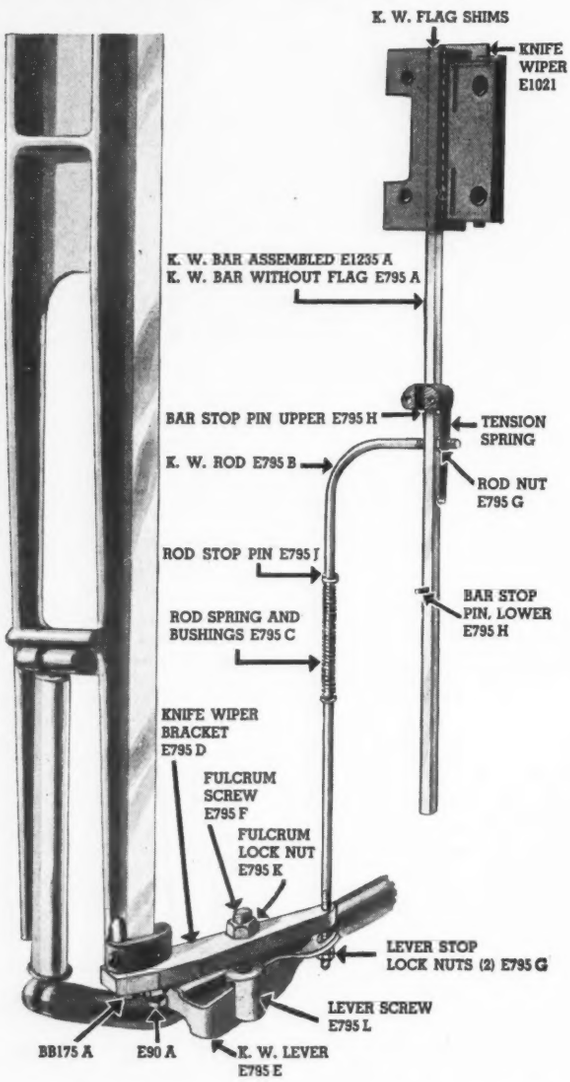
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BAR STOP PIN UPPER E795 H
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ROD NUT E795 G
ROD STOP PIN E795 J
BAR STOP PIN, LOWER E795 H
ROD SPRING AND BUSHINGS E795 C
KNIFE WIPER BRACKET E795 D
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movable in a direction to divide one wall of the tube across the end of the fixed plate and the opposite wall of the tube across the edge of the knife, and means intermediate the fixed plate and fixed knife for maintaining the edge of the knife and the face of the plate out of contact with each other at all times.

2,043,604. METHOD OF PREPARING WIPING ROLLERS FOR PRINTING. Serge Beaune, Creteil, France, assignor to Societe des Procedes Serge Beaune, Creteil, France. No Drawing. Original application May 23, 1929, Serial No. 365,449. Divided and this application February 9, 1934, Serial No. 710,572. In France May 29, 1928. 2 Claims. (Cl. 91—67.8.)

1. A method of manufacturing wiping rollers for removing the excess of ink or color on printing forms, this method consisting in preparing a supporting core perfectly centered and covering this core with a layer of resilient material made of whiting, wax, glycerine, gelatin and water.

2,043,680. PRINTING DEVICE. Walter A. Tratsch and Bernhard C. Grunig, Chicago, Ill. Application June 24, 1935, Serial No. 28,080. 10 Claims. (Cl. 101—66.)

1. A printing and web-severing unit comprising: a supporting frame; a printing drum rotatably mounted upon the supporting frame; an actuating member and a plunger; a platen and a web-severing knife pivotally mounted upon the supporting frame; means co-acting with the actuating member, when the latter is operated, to advance the relatively free end portion of an inscription-receiving or score ticket web relative to and past the platen and web-severing knife and between the same and the printing drum; means urging the platen and the web-severing knife into engagement with the inscription-receiving web; means normally latching the platen and the web-severing knife out of engagement with the inscription-receiving web, or ineffective position, against the action of the urging means; and means for releasing the latching means from latching engagement with the platen and the web-severing knife including an electromagnet and an electric circuit for controlling the operation of the electromagnet; the circuit including two switches arranged therein in series; means coacting with the actuating member, when the latter is operated, to close one of the switches; and the other of the switches being closed by operation of the plunger so as to close the circuit to the electromagnet and thus move the latching means out of latching engagement with the platen and the web-severing knife so as to allow the same to be moved into engagement with the web by the urging means.

2,044,472. GLUING MACHINE. Joseph Ettl, Plainfield, N. J., assignor to Potdevin Machine Company, Brooklyn, N. Y., a corporation of New York. Application November 2, 1934, Serial No. 751,171. 21 Claims. (Cl. 91—50.)

11. In a machine, the combination of a gluing roller, feed rollers for forwarding materia between the feed rollers and gluing roller, means for driving one of the feed rollers at one peripheral speed and the other of the feed rollers at a higher peripheral speed than the other.

2,043,432. PRINTING AND EMBOSSING. Carl A. Flood, Framingham, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Massachusetts. Application September 14, 1934, Serial No. 743,966. 9 Claims. (Cl. 101—196.)

1. A multicolor printing and embossing machine comprising means including a series of dies for recurrently printing recurrent sections of a strip of material with different colors and cutting out the sections, means in advance of the series of dies for feeding the strip of material to the dies, and means beyond the series of dies for holding taut the portion of the strip between the last two means, the first means having more positive control over the strip than the second means whereby the rate of travel of the strip is determined solely by the first means.

2,044,124. ATTACHMENT FOR MULTIPLE PRINTING. Horace M. Rantin, Atlanta, Ga. Application January 22, 1935, Serial No. 2,954. 2 Claims. (Cl. 271—62.)

1. The combination with a Kluge printing press feeder having a base plate, slide members carried by the plate and formed with upwardly projecting portions connected by an elevator arm shaft, an elevator plate movable over the base plate, and an elevator adjusting arm engageable with a stack of stock, of a divider plate mounted centrally of the base plate and secured thereto, the elevator plate being formed with a slot through which extends the divider, a stack engaging finger adjustably mounted on the elevator arm shaft on opposite sides of the elevator adjusting arm, and adapted to engage a respective stack of stock, whereby sheets may be fed simultaneously from stacks separated by the divider.

2,048,629. SAW GAUGE FOR PRINTERS' TABLES. Gustaf E. Wallin, Omaha, Nebr. Application February 5, 1935, Serial No. 5,101. 5 Claims. (Cl. 29—67.)

5. A gauge for attachment to saw tables, comprising a main frame having a guideway therein, a second frame mounted in the guideway for lengthwise movement on the main frame, means for locking the sliding frame in adjusted position on the main frame, a longitudinal bearing member on the sliding frame, a gauge arm having an arm with a cylindrical bearing engaging the bearing member, the gauge arm adapted to be swung into and out of operative position with respect to the main frame and the saw table, a latch device carried by the gauge arm and adapted for operation to secure the gauge arm in adjusted position on the sliding frame, means for adjusting the gauge arm when in operative position lengthwise of the sliding frame, and means for securing the sliding frame in adjusted position on the main frame.

2,048,090. MAKE-UP RULE AND GAUGE. Joseph L. Zeiger, Worcester, Mass Application March 25, 1935, Serial No. 12,881. 1 Claim. (Cl. 33—174.)

As an article of manufacture, a make-up rule and gauge comprising a rectangular flat make-up rule body having a length and width which are multiples of the pica unit, the body having a portion reduced in width and forming a handle portion projecting from it in the same plane, and a scale comprising squares covering the whole surface of the body and handle and dividing the whole rule into square picas, the rule having perforations extending all the way through the article and having a fixed position with respect to the scale, and having a length and width equal to a definite number of picas for measuring purposes.

2,048,965. TYPE FORM. James Edward Parker, Washington, D. C. Application August 31, 1933, Serial No. 687,720. 6 Claims. (Cl. 101—401.3.)

2. A type form assembly including a plurality of rows of type units, each type unit being provided with opposed recesses on opposite sides thereof intermediate between the ends of the units, the recesses in the type units registering to form a continuous passage between adjacent rows and intervening members between the rows lying partly within the recesses of one row and partly within the recesses of the adjacent row, the intervening members being of such dimensions as to substantially fill the recesses as to depth but being incapable of filling the recesses for their entire length along the longitudinal axis of the units, by an amount less than the height of the type face above the type shoulder, and a yieldable support for the feet of the type so that type of slightly varying lengths are slidable longitudinally to give a substantially uniform printing surface.

2,048,870. AUTOMATIC DRYING DEVICE FOR INKED SHEETS. Henry M Kannee, Washington, D. C. Application June 28, 1935, Serial No. 28,795. 4 Claims. (Cl. 198—213.)

1. In drying devices for inked sheets, a plurality of spaced vertical shafts, a spiral wire carrier connected to each shaft for rotational movement therewith, a spirally turned blade carried by each wire carrier and adapted to receive an inked sheet, the carrier being adapted to permit gravitational movement of a sheet from an upper point thereof to a lower point thereof, and means for rotating the shafts in synchronism.

2,048,754. WEB PROCESSING MACHINE. Charles P. Putnam, Lock Haven, Pa. Application August 31, 1932, Serial No. 631,195. 3 Claims. (Cl. 271—2.3.)

1. A web processing machine comprising processing rolls, one of the processing rolls being of a constant diameter and over which the web of paper passes, a plurality of belts engaging

(Continued on Page 46)

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Metzger Photo Supply Co., 1091 So. Main St., Akron, Ohio
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C. S. Illingworth, 49 Springville Avenue, Buffalo, New York

New Things

(Continued from Page 24)

The side guides are adjustable by means of a crank outside the press frame and are movable while the press is in operation. The front guides are mounted on an adjustable shaft (adjustment can be made from outside of the press) to keep gripper edge of sheet parallel with both guides.

The press is provided with built-in Baldwin press washer as standard equipment.

Ink and water motions are operated from the main shaft.

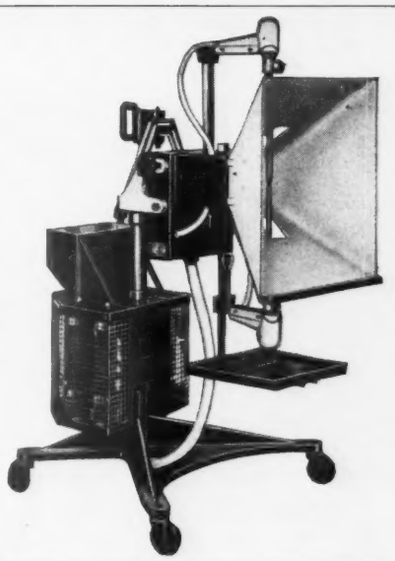
Further information will be furnished by Willard Manufacturing Corporation direct or in care of *Printing* EQUIPMENT *Engineer*.

Two New Lamps Announced

Two new white flame open arc lamps, each mounted on telescoping standard, have been announced by The C. F. Pease Company. One is known as the One-Speed 50-amp. Lamp and the other is called the Two-Speed 45-90-amp. Lamp. The lamps are especially adapted for vacuum frame and printing frame use, for work up to and including 36 in. by 44 in. size, and for other purposes generally requiring illumination at a height adjustment which need not be changed constantly.

The lamps operate on 110 v., d.c. or a.c. current.

The telescoping standard is set into a four-legged cast iron base having ball-bearing casters and 3 in. solid rubber rollers. A hand lifter provides a way to raise or lower the lamp for vertical adjustment. The adjustment may be locked at any height by means of a hand set screw.

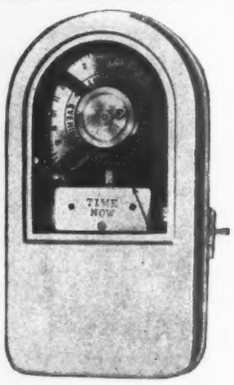


View showing Two-Speed 45-90 amp. Lamp for vacuum frame and printing frame work. The lamp is fitted with telescoping standard and is shown here in lowest working position.

The lamp mechanism is suspended within cast aluminum swinging type bracket attached to top of standard. Thumb set screw is provided for locking at any point of swing. The Two-Speed 45-90 amp. lamp can be swung through a 180 deg. arc at all heights. The One-Speed 50-amp. lamp can only be swung through a 180 deg. arc when center of arc is above 30 in. from the floor or when resistance coils are mounted on wall; otherwise only through a 160 deg. arc. Also can be tilted vertically 10 deg. upward and 20 deg. downward. One piece solid cast aluminum reflector measures 18½ in. sq. at outer edge. Manufacturer states these lamps give intense, uniform light distribution over large area without shadows.

Automatic Circuit Control Clock

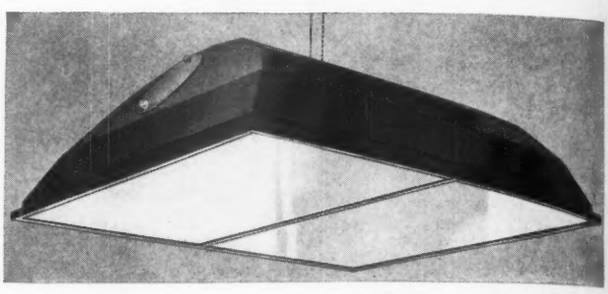
The new Little Giant Tork Clock just announced by the Tork Clock Company of Mount Vernon, New York, is designed for the daily automatic control of electrical circuits. It operates without winding or regulating and may be quickly set on variable schedules without the use of tools. Simplicity in design effects a quick make and break action with pure silver contacts with nearly 50% less parts than formerly used. The twenty-four hour day is divided into four sections of six hours each covering morning, afternoon, evening, and night. The entire device is made of non-corrosive materials including heavy clock brass, stainless steel, and moulded bakelite. A non-magnetic housing prevents distortion of the strong magnetic currents which drive the motor. Fast moving gears run in a sealed oil chamber. Rifled bearings and a new centrifugal thrower prevent oil leakage or evaporation. A counter-clockwise second hand indicates proper motor operation. The device has 5,000 watts capacity for either single or double pole service and is housed in a cadmium-plated case with unbreakable window. A large wireway and five plug buttons for ½ in. and ¾ in. conduit connections facilitate installation. Weighs 3 lbs.



Little Giant Tork Clock designed for the daily automatic control of electrical circuits.

Benjamin Skylight Unit

The Benjamin Skylight Unit is suitable for local lighting in the printing plant, and for inspection and other operations where it is necessary to look directly at the reflection of the light source from opaque, polished or shiny surfaces such as newly-cast slugs, type and strip rule. Two or more of these units mounted close together make in effect an artificial luminous ceiling of the type recommended by the I.E.S. Committee for the lighting of imposing stones in printing plants. The size of this unit is 35 in. by 28 in. and because of its rectangular shape is, in many cases, more suitable for



View of Banjamin Skylight Unit which supplies glareless illumination for newly-cast slugs, type and strip rules and is suitable for illumination over vertical printing presses.

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the lighting of vertical presses than a circular type of reflector of the same diameter.

The Skylight Unit consists of a porcelain enameled trough type reflector and has two medium base sockets recommended for 15-200 watt lamps. The unit is supplied with an opal glass cover.

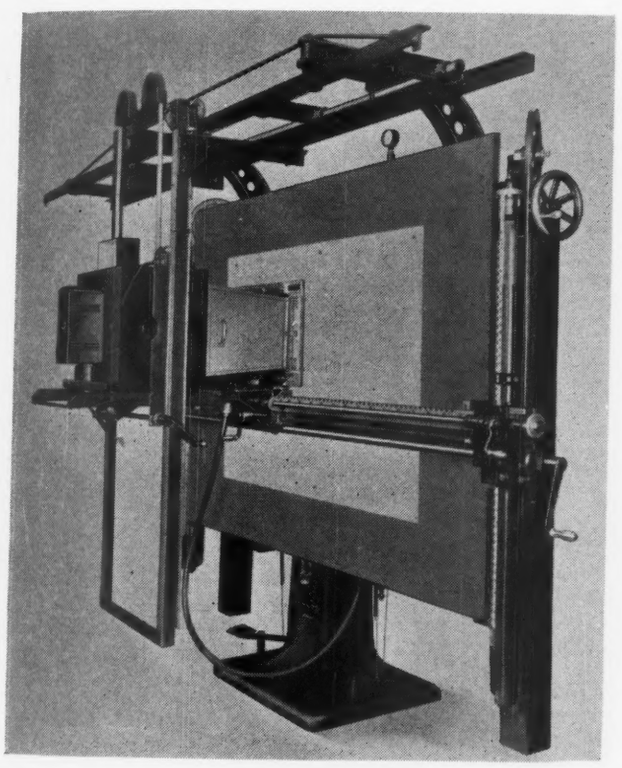
Glyptal Cement

Glyptal cement, a derivative of Glyptal alkyd resins that is flexible, transparent, and adhesive, is currently being placed on the market by the General Electric Company's Appliance and Merchandise Department, Bridgeport, Conn. It will mend or adhere to all common materials except rubber and is both water and oil-resistant.

For industrial and commercial use, Glyptal Cement is offered in quantities varying from pint-sized containers to large drums. For domestic use, the new cement is being merchandised through retail household outlets in tube form.

M-H Photo-Composing Machine

A new Vertical Photo-Composing Machine has been announced by the Lanston Monotype Machine Company. The machine has been specially designed for securing close precision in registering negatives for single and multiple-color process work in lithographic, offset and gravure plate making.



M-H Vertical Photo-Composing Machine. Manufacturer states it has been designed for securing close precision in registering negatives for single and multiple-color process work in lithographic, offset and gravure plate making. This view shows the lamp in position for exposure, the hood preventing light from reaching any portion of the plate except that under the negative. After exposure, the lamp is pushed back out of the way to permit change to the next exposure position.

Manufacturer states images are positioned on the plate in desired position by rigid construction and the use of a micrometer movement for final adjustment into position at high speed. The device for positioning the image vertically or horizontally on the printing plate consists

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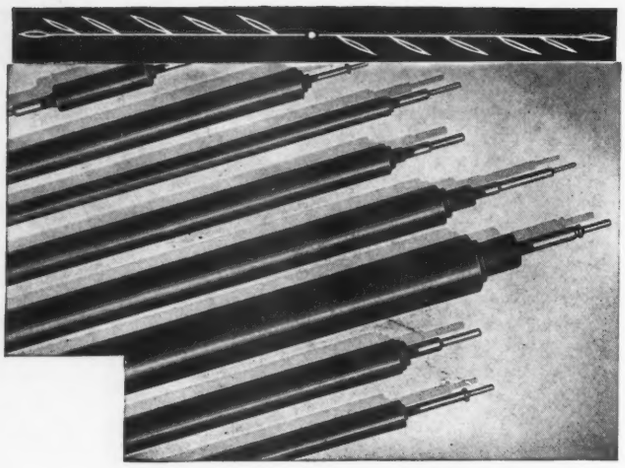

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GENERAL RUBBER ROLLERS

of a notch bar system and a hardened and ground micrometer steel screw. By means of the calibrated screw the notch bars may be set to position by thousandths of an inch.

The saddle carrying the negative holder with the negative registered in the holder is moved along the beam of the photo-composing machine to the required inch position by a crank operating a pinion engaging a rack on the beam. The saddle is accurately located for this inch position by engaging its hardened steel locking bar in the selected notch of the beam notch bars. After the saddle is positioned it is locked to the beam by two screws. The saddle and beam are now adjustable as one piece. For fractional inch positions the complete beam, with the registered negative locked to it is moved by turning the micrometer screw.

The M-H Non-Embossing Negative Holder is made with register pins on all four sides to permit placing the Holder in the Photo-Composing Machine with the image head up or down, to the right or left. It is said that with even 20 in. or more of vacuum the plate will not be embossed. The Holders are adjustable for any thickness of glass from ⅛ in. to ⅜ in., and are made in a variety of sizes from 9 in. by 11 in. to 28 in. by 34 in.

The M-H Universal Register Device for use with the Vertical Photo-Composing Machine will receive any size M-H Non-Embossing Negative Holder from 9 in. by 11 in. to 28 in. by 34 in. without adjustment of any kind. The Negative Holder is placed in position on the Register Device and the Negative is adjusted into registered position over the vertical and horizontal lines in the glass plate upon which the negative is in direct contact.

Lamp for Localized Lighting

The new Uni-focal Lamp announced by The Fostoria Pressed Steel Corporation, with reflector of spun Alzak Aluminum, reflects light rays into a converging beam which brings the light to a focus about 15 in. ahead of the reflector. Uniform and intensified illumination over a restricted area results but glare is eliminated by the effective shielding of the bright light source.

Uni-focal Lamp—just manipulate the jointed arm to locate the lamp so it will throw rays where wanted.

Directing the light is the Fostoria Supporting Arm with wearproof ball and socket joints that permit focusing light rays on working surfaces from any angle or direction without tightening or loosening the joints. The oil-resisting light cord is carried inside the supporting arm with a positive lever switch conveniently located in the handle grip on the reflector.

Insulation System

A new "built-from-the-inside-out" insulation system developed by the General Electric Company and applied to its general-purpose line of random-wound squirrel-cage polyphase induction motors, according to G-E insulation engineers, is based on a new philosophy in their field of endeavor. It is the outgrowth of an analysis which they made recently to determine the relative importance of each component in a random-wound motor assembly. F. P. Wilson, Jr., assistant head of the G-E insulation engineering department, discusses their findings and describes the new insulation system as follows:

Our studies revealed that the enamel film on the conductor exerts the greatest influence on coil life. In recognition of this fact, various means of improving the quality of the enamel film and better methods of handling the enameled wire during assembly operations are incorporated in the new system of insulating the random windings. As a result, an insulation assembly is produced with high resistance to moisture and other common deleterious influences such as mild acids, alkalis, oil, and abrasion, and the need for taping the end windings is eliminated.

Double-enameled, bonded-cotton or paper-covered wire is employed for the stator coils. The film of enamel on the wire is applied in such a way that its thickness, hardness, flexibility, resistance to solvents and heat shock are accurately controlled. The cotton or paper covering acts as mechanical protection for the enamel during assembly of the coils, and the bonding prevents the covering from sliding on the smooth enamel.

After assembly, the stator undergoes a dipping procedure which utilizes a new varnish of the synthetic-resin type having high penetration, retention, and bonding-strength properties. A special baking process is used and through it the time of exposure of the insulated assembly to elevated temperatures is reduced by as much as 75 per cent. Following the baking period the end windings, instead of being taped, are given an application of tough, hard, oil-proof and abrasion-resisting Glyptal, a G-E alkyd-resin product.

The special baking process was adopted because heat ages insulation, as is recognized by the establishment of the A.I.E.E. temperature limit for organic insulating materials at 105 deg. C maximum. Since it is necessary to use temperatures above 105 deg. C. in baking insulating varnishes of the modern type, the reduction in the time of exposure to elevated temperatures, which is made possible by the new process, assures potentially longer life of the insulated structure as regards its tendency to heat-age.

H. B. Rouse Passes

Harry Burdette Rouse, founder and president of H. B. Rouse and Company, Chicago, passed on recently. Mr. Rouse was a pioneer in development of accurate and practical plate mounting equipment for color register work and was inventor of many labor-saving devices.

In April 1906 the firm of H. B. Rouse and Company was formed by H. B. Rouse, Wm. J. Knoll, and W. A. Sittig. Mr. Rouse was president until his death. The Company is actively headed at the present time by Walter A. Sittig and Wm. J. Knoll.

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Nowiny Publishing Co., Milwaukee, Wis.
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The Saratogian, Saratoga Springs, N. Y.
Missoulian, Missoula, Montana
Grant County Independent, Lancaster, Wis.
Port Huron Times-Herald, Port Huron, Mich.
Middle States Publishing Co., Joliet, Ill.
Post-Dispatch, St. Louis, Mo.
Post-Tribune, LaSalle, Ill.

Trade Composition Plants:

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John C. Meyer Co., Philadelphia, Pa.
Butler & Currie, New York, N. Y.
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Commercial Plants:

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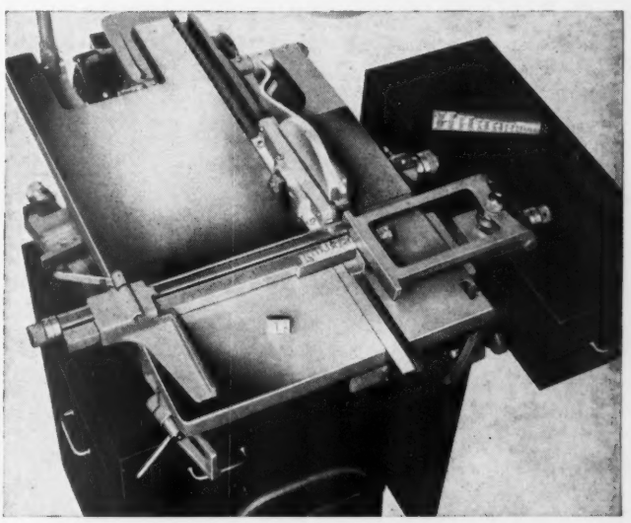

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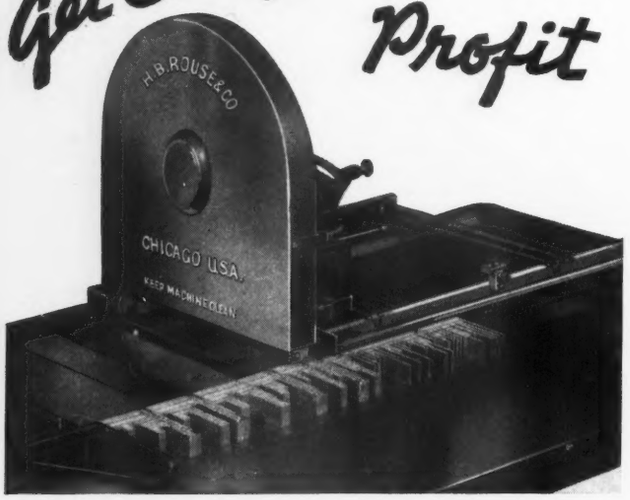

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Patents

(*Continued from Page 40*)

the web as it passes over the constant diameter roll, the belt being continuous and each passing over a plurality of pulleys, a driving connection between the roll of uniform diameter and one of the pulleys of the belts for driving the belts at a speed lower than the speed of the web which the belts engage, and means for applying a uniform pressure of the belts upon the web at the point where it contacts with the belts, whereby a constant tension is applied to the web.

2,048,634. ROLLER GRINDING MACHINE. Joseph R. Keller, Bridgeport, Conn., assignor to The Black Rock Manufacturing Company, Bridgeport, Conn., a corporation of Connecticut. Refiled for abandoned application Serial No. 13,042, March 26, 1935. This application December 5, 1935, Serial No. 53,019. 5 Claims. (Cl. 51—49.)

1. In a roller grinding machine, the combination with a frame of a feed screw journalled in the frame supports, a driving spindle, a tail stock adjustably mounted upon the frame and in alignment with the axes of the driving spindle, a driving shaft, connections therewith for driving the spindle, change speed gearing through which the feed screw is operated, a clutch mechanism intermediate the change speed mechanism and the feed screw whereby the latter may be driven forward or backward, a carriage slidably mounted above the driving spindle and tail stock and connected to be moved longitudinally by the feed screw, a motor and grinding wheel adjustably mounted upon the underside of the carriage in a manner to operate on a roller carried below on the spindle and tail stock, an automatic trip mechanism adapted to be engaged and operated by the motor carriage to operate the clutch in a way to reverse the rotation of the feed screw.

2,047,993. MACHINE FOR COATING PRINTERS' ROLLERS. Carl G. Bingham, Highland Park, Ill., assignor to Sam'l Bingham's Son Mfg. Co., Chicago, Ill., a corporation of Illinois. Application November 22, 1933, Serial No. 699,175. Renewed March 11, 1935. 15 Claims. (Cl. 91—30.)

8. A printers' roller coating machine comprising means for rotatably mounting a roller, a composition-applying broad-surfaced spatula, means for mounting the spatula for movement along the roller and for maintaining the broad-surface of the spatula tangentially against the roller, and means for feeding melted roller composition onto the spatula.

Miscellaneous:

2,051,102. MEANS OF ENGRAVING DIES. Henry L. Pitman, Westfield, N. J., assignor, by mesne assignments, to Ralph C. Coxhead Corporation, New York, N. Y., a corporation of Delaware. Original application March 19, 1931, Serial No. 523,920. Divided and this application November 15. 1932, Serial No. 642,751. 15 Claims. (Cl. 90—13.1.)

15. In a type engraving machine, a fixture for holding a pattern to be traced by a stylus the fixture including a stationary base plate having a transverse groove therein into which the pattern may be inserted from one end thereof, the base plate having also a longitudinal groove extending into only one side of the transverse groove, a slide supported in the longitudinal groove, means on the slide to locate the pattern in a definite position lengthwise of the transverse groove, the slide being also effective to hold the pattern against the opposite side of the transverse slot, means on the base plate to overlap one edge of the pattern, means on the slide to overlap the opposite edge of the pattern to assist in holding the pattern in the groove, and means to secure the slide in its effective position to assist in preventing accidental displacement of the pattern.

2,051,573. LATE NEWS MECHANISM FOR PRINTING MACHINES. Cecil George Quick, Eltham, London, and Thomas Richard Bennett, Willesder, London, England, assignor by mesne assignments, to R. Hoe & Co., Inc., New York, N. Y., a corporation of New York. Application January 5, 1933, Serial No. 650,340. In Great Britain, January 22, 1932. 16 Claims. (Cl. 101—221.)

1. In a printing mechanism, the combination of a late news printing cylinder, a cooperating impression cylinder, a planetary gear system for transmitting drive between the impression and printing cylinders, means for so controlling the planetary gear system that the printing cylinder can be speeded up to the speed of the impression cylinder and in proper circumferential register therewith, means for moving the printing and impression cylinders relatively to one another into and out of printing position, and devices for so interlocking the first and second means that in moving from a non-printing position the first means must be actuated first to effect speeding up and registration before the second means can be actuated to effect movement of the cylinders into printing position and vice versa when moving from a printing position.

2,052,293. PROCESS OF TYPOGRAPHIC RELIEFING. Edward M. Hensley, Chicago, Ill. Application June 23, 1934, Serial No. 732,084. 4 Claims. (Cl. 41—25.5.)

1. A process of typographic reliefing, which consists in obtaining an impression from an inked form upon a foundation sheet, dusting the printed surface of the sheet with a resinous powder so as to cause the ink to fix the powder throughout the impression proportionately to the density of the ink thereon, saturating a sheet of tissue with an overlay fixative oil, and securing the soaked sheet in position over the powder.

2,052,350. PRINTING. Barnard J. Kelly and James W. Kemmler, Philadelphia, Pa., assignors to Sloane-Blabon Corporation, Philadelphia Pa., a corporation of Delaware. Application July 30, 1932, Serial No. 626,593. 6 Claims. (Cl. 41—26.)

6. The method of forming patterns which comprises depositing one color upon a design area of the surface to be decorated, depositing one color upon an adjacent area which is to form a design portion and blending the colors in an entire area, including several design portions of different colors, by moving a brush from above the deposited colors toward the design area, pressing and then withdrawing it from the deposited colors.

(*Continued on Page 48*)

VULCAN

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Errors

(*Continued from Page 28*)

It becomes apparent that the extent of all educational errors, with the probable exception of errors of division, lies partly within the control of the newspaper. By following a simple, definite style, and by editing news copy more accurately, errors of style, grammar and punctuation can be reduced materially. Any measurable reduction will mean a significant saving of composing room time and money as well as an improvement in accuracy Even though there is much room for savings in educational errors there is much greater room in the field of those typographical errors which result from the imperfections of men and machines.

While the time and money savings are of vital consideration, it is doubtful if they are of greatest importance. News copy is turned into type for editions at such a fast pace today that there seldom is time to read and correct all proofs before the pages are closed. Hence, every error which is prevented in the original composition of "railroaded" news means there will be one less error to offend the reader.

There is still another vital, though intangible, benefit to be derived from the prevention of errors in original setting. Many printers realize that some of the worst errors appearing in newspapers are made in the setting of correction lines. Even when there is time to proofread and correct a large portion of news there is seldom time to check and correct revise proofs. It is obvious, then, that the greater the number of lines which are set correct originally, the less the chance for making serious errors in setting the remaining corrections, and, consequently, the less the number of errors that get into print.

Every publisher who takes pride in his newspaper and who has suitable regard for his pocketbook will adopt every possible means to reduce the high cost of errors. A number of practical and effective methods have been outlined above. If put into practice they will bring errors closer to an irreducible minimum.

Babcock Reorganization Plan

The Babcock Printing Press Mfg. Company of New London, Conn., has filed with the U. S. District Court at New Haven, Conn. a petition asking the Court to permit it to reorganize under Section 77B of the Bankruptcy Act.

The Company, organized in 1882, is one of the oldest in this country manufacturing printing and cutting and creasing presses. It also carries on a grey iron foundry jobbing business at 38 Pequot Avenue, New London, Conn. It states that the reason for the application is because of losses sustained to the amount of about $1,000,000 during the depression, and the consequent necessity of re-organizing its capital structure. Total Assets were placed at $2,099,577.99 with a deficit of $859,199.12.

It is reported that consents to the Plan of Reorganization have been received from the great majority preferred and common stockholders and creditors.

The Company reports that its business for 1936 shows a substantial increase over any other year during the depression and, therefore, it believes that now is the proper time for re-organization.

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Daney Passes

Norman L. Daney, treasurer, general manager and director of the Harris Seybold Potter Company, 4510 East 71st Street, Cleveland, died Sunday afternoon at his residence 21150 Byron Road, Shaker Heights, Ohio, after a long illness. Known to his friends as "Norm" he was highly respected. Mr. Daney came to Cleveland from Mount Vernon, Ohio five years ago and on September 27, 1933 was made general manager of the Harris Seybold Potter Company. Born in Elyria, Ohio, August 20, 1883, he attended Elyria High School and was graduated in Mechanical Engineering from Ohio State University.

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Patents

(*Continued from Page 46*)

2,052,351. PRINTING. Bernard J. Kelly and James W. Kemmler, Philadelphia, Pa., assignors to Sloane-Blabon Corporation, Philadelphia, Pa., a corporation of Delaware. Application June 16, 1934, Serial No. 730,897. 18 Claims. (Cl. 41—26.)

13. The method of printing designs on sheet material which comprises forming a block having foraminous strand portions corresponding to design areas to be printed, the design strand areas being in a different plane than the strand areas which do not form a part of the design, applying color to the surface of said design strand portions, evenly distributed thereover, whereby it is held suspended by the ends of the strands thereof, and moving the block into proximity to the material to be printed whereby the suspended color is transferred to the surface of said material.

15. The method of forming printing blocks which comprises forming a brush of the size of the desired block and removing at least the ends of the strands throughout the areas thereof in which printing by the block is not desired leaving the ends of the strands within the printing areas in a higher substantially uniform plane than the material in other areas.

2,052,989. PRINTER'S PLATE CLAMPING DEVICE. Siegmund Roesner, Oak Park, Ill. Application September 30, 1935, Serial No. 42,771. 4 Claims. (Cl. 101—385.)

1. A printer's expansible drop-in hook adapted for use in the holes of a honeycomb base block, comprising a body member formed with a plate-engaging jaw on its upper end, a cam on its intermediate portion on the opposite side from the jaw, and a hook on its lower end on the same side as the jaw, and an expander, comprising an arm pivoted at its lower end to the lower end of the body member, and a screw in its upper end adapted to be screwed downwardly in sliding contact with the cam to thereby spread the upper portions of the body member and arm and force the hook beneath a shoulder on the wall of the hole.

2,053,473. COMBINED HOT STAMPING AND PERFORATING DEVICE. Herman Gould, Brooklyn, and Frank Ackerman, Bronx, N. Y., assignors to Ackerman-Gould Corporation, New York, N. Y., a corporation of New York. Application November 21 1934, Serial No. 754,126. 6 Claims. (Cl. 41—1.)

1. A hot stamping press comprising in combination, a frame having mounted thereon a platen, type holding means, means for moving the platen and the type holding means relatively to each other for stamping operations, a color strip movably disposed over the platen in spaced relation thereto beneath the type holding means, a cushioning strip movably disposed upon the platen to lie substantially flush therewith in underlying relation to the color strip and means responsive to the relative movement of the platen and the type holding means for simultaneously moving both the color strip and the cushioning strip relatively to the platen to present fresh portions thereof beneath the type holding means for each stamping operation.

4. A stamping and perforating die comprising a block having a printing surface, cutting means within the outline of and normally projecting in advance of the printing surface and defining therewith the outline of the design or character to be cut by the die and relief recesses at the bases of the cutting means extending deeper than the printing surface.

Plate Making:

2,052,758. STEREOTYPE PLATE. Frank A. Foster, Maywood, Ill., assignor to The Goss Printing Press Company, Chicago, Ill., a corporation of Illinois. Application January 18, 1935, Serial No. 2,343. 3 Claims. (Cl. 101—375.)

1. A cylindrical stereotype plate having internally projecting, spaced-apart ribs disposed longitudinally on the interior of the plate as elements of a cylindrical surface, the ribs being slightly beveled in cross-section, and also longitudinally on their inner faces, to permit withdrawal of the plate longitudinally from the core of a casting machine and undercut devices formed on the inner surface of the plate adjacent to its ends whereby plate tensioning means may hold the plate about a cylinder.

2,053,115. PROCESS FOR REPRODUCING COLORED COPY ON PRINTING PLATES. Lawrence B. Snyder, Detroit, Mich., assignor to Meinograph Process, Incorporated, Detroit, Mich., a corporation of Michigan. Application September 20, 1934, Serial No. 746,256. 5 Claims. (Cl. 95—5.1.)

1. A process for reproducing a colored copy of a subject comprising making a complete picture of the subject in a plurality of primary colors on a sole member having transparent characteristics throughout its total effective area, placing behind the sole member one at a time a plurality of color filters each reflecting only a desired color, and photographing by reflection with light from the picture and each of the color filter combinations to obtain a color separation negative for each of the primary colors, printing the separation negatives to obtain plates each having one of the primary colors, and printing the plates over one another to obtain a colored reproduction of the picture.

Printing Presses:

2,050,031. PRINTING PRESS. Henry A. Wise Wood, New York, N. Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a corporation of Virginia. Application February 20, 1931, Serial No. 517,138. 7 Claims. (Cl. 270—5.)

1. In a printing press, a plurality of single-color units each adapted to print a web, means for assembling the webs, a pair of multi-color units adapted to print on opposite sides of another web, and means for introducing the latter web at any desired position in the assembly of webs.

2,050,034. WEB PERFECTING ROTARY PRESS. Howard M. Barber, Pawcatuck, Conn., assignor to C. B. Cottrell & Sons Company, Westerly, R. I., a corporation of Delaware. Application July 27, 1935, Serial No. 33,498. 6 Claims. (Cl. 101—179.)

1. In a web perfecting rotary press, first and second multicolor printing units offset from each other at opposite ends of the press, first and second combined heating and cooling units located side by side between the printing units and in line with their respective printing units, a web supply roll located in line with the first printing unit, and means for leading the web through the units and delivering the web.

2,051,135. AUXILIARY INKING MECHANISM. Joseph R. Donohue, Cincinnati, Ohio, assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a corporation of Virginia. Application September 15, 1933, Serial No. 689,636. 8 Claims. (Cl. 101—351.)

1. A fountain for a printing press having a fountain roll therein, a frame in the fountain on which the fountain roll is mounted, the frame being movable to carry the fountain roll independently of the fountain either into ink-delivering or non-ink-delivering position, and independent means for supplying ink to the press.

2,051,858. PRINTING CYLINDER. William F. Huck, Richmond Hill, N. Y., and Irving A. Hunting, South Plainfield, N. J., assignors, by mesne assignments, to R. Hoe & Co., Inc., New York, N. Y., a corporation of New York. Application December 18, 1934, Serial No. 758,124. 16 Claims. (Cl. 101—415.1.)

1. In a printing cylinder having a gap, means for attaching one terminal of a flexible printing plate to the cylinder, a movable member supported in the cylinder and operable to open and close the gap, means for attaching the opposed terminal of the flexible printing plate to the movable member, a manually operable member, and a resilient member operably

connecting the movable member and manually operable member to move and bias the movable member toward gap closing position by the movement of the manually operable member to thereby securely bind the flexible printing plate around the periphery of the cylinder.

2,050,851. PLATE CLAMPING MECHANISM FOR PRINTING MACHINES. Frederick Lamatsch, Grantwood, N. J., assignor, by mesne assignments, to R. Hoe & Co., Inc., New York, N. Y., a corporation of New York. Application May 25, 1934, Serial No. 727,390. 9 Claims. (Cl. 101—378.

1. In a device, the combination with a cylinder having a recess and adapted to receive a printing plate, a plate engaging clip arranged in the recess, the clip having a threaded bore, a screw shaft engaged in the bore and having an unthreaded portion, a toothed operating wheel slidably and non-rotatably mounted on the unthreaded portion, a pawl fastened to the clip and engageable with the toothed wheel, and other means including an abutment secured to the cylinder for preventing axial movement of the shaft relatively to the cylinder, the pawl serving to retain the operating wheel against translational movement relatively to the clip.

2,052,252. PRINTING AND FURNISHING SYSTEM. Alexander Sattler, Brux, Czechoslovakia. Application July 27, 1932, Serial No. 625,107. In Czechoslovakia, August 3, 1931. 2 Claims. (Cl. 270—18.)

1. In a rotary web printing press, the combination of the mechanism for driving the rotary printing cylinders with a sheet pasting and feeding belt, rollers arranged with their shafts in stationary bearings and carrying the belt traveling at the same speed as the surface of the printing cylinders, a device for pasting the belt, a gear meshing with a wheel of the printing cylinders to cooperate with the device of pasting, a support carrying a stack of sheets, belt guiding means arranged between the rollers to depress the belt in respect to the stack for transferring its topmost sheet to the belt, a pathway for a web guided by the printing cylinders, and means for guiding the sheets to the pathway.

2,052,556. MULTICOLOR PRINTING. Arthur B. Davis, Springfield, Ohio. Application October 19, 1932, Serial No. 638,493. 5 Claims. (Cl. 101—174.)

1. For use in a multi-color printing press having a plurality of plate-supporting cylinders, the combination of a plurality of type-carrying sheets for printing different colors on a page, a pair of fastening devices on each sheet extending along opposite marginal edges thereof, a plurality of securing members attached to the respective cylinders in exactly corresponding position and each arranged to interengage with the fastening devices on any one of the plates in a fixed relation and to fasten the plate securely to the cylinder, fastening devices on each sheet being located in the same position relative to the type-face of the sheet as the devices on the other sheets whereby a predetermined relation will be established between the different plates and the respective cylinders as an incident to mounting the plates on the latter.

2,052,638. ROTARY WEB UNDERSURFACE PRINTING MACHINE. Frank Charles Marquardt, New York, N. Y., assignor to American Bank Note Company, New York, N. Y., a corporation of New York. Application August 20, 1935, Serial No. 37,083. 17 Claims. (Cl. 101—228.)

1. A rotary web undersurface printing machine embodying therein, in combination with an impression cylinder and a plate cylinder adapted to receive an engraved steel plate, of a pair of drawback rollers between which the paper web runs, a clamping mechanism operative to cause the rollers to be alternately engaged with, and disengaged from, a web, a roller feed mechanism operative to oscillate the rollers, main actuating means acting in synchronism with the movement of the plate cylinder, an intermediate mechanism acted upon by the main actuating means and operative upon the clamping mechanism to cause disengagement of the rollers from a web during the making of an impression, and to cause the engagement of the rollers with a web following the making of an impression, and an intermediate mechanism acted upon by the main actuating means and operative upon the roller feed mechanism to turn the rollers while engaged with a web in one direction to impart a reverse movement to a web, and in the opposite direction while the rollers are disengaged from a web.

2,052,679. PRINTING. James Arthur Wainwright and James William Harrop, Spondon, near Derby, England, assignors to Celanese Corporation of America, a corporation of Delaware. Application February 7, 1933, Serial No. 655,550. In Great Britain February 13, 1932. 2 Claims. (Cl. 101—169.)

1. In a printing machine having a printing roller, a doctor-blade or scraper having a longitudinally rigid operating edge made of benzyl cellulose, means for holding the blade comprising a pivotally mounted gripper and a manually operable lever for rotating the gripper to press it against the printing roller to remove excess printing composition adhering thereto.

2,053,958. PRINTING PRESS DRIVE. John A. Isbell, Plainfield, N. J., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a corporation of Virginia. Application July 7, 1932, Serial No. 621,208. 8 Claims. (Cl. 101—220.)

1. In a printing press, the combination with a motor having a pair of driving wheels connected with its shaft, of a pair of flexible driving connections, one associated with and driven by each of the wheels, the driving connections being associated with certain cylinders of the press so that one will drive the cylinders in one direction or the other in the other direction, and means for connecting either of the flexible connections with the cylinders and disconnecting the other drive for reversing the direction of rotation of the cylinders.

Steele Promoted by Duplex

George R. Steele who has been associated with the sales department of the Duplex Printing Press Co. in middle western territory, it has been announced by President Irving K. Stone of the Duplex organization, has been placed in charge of the entire central and middle west territory. Mr. Steele will maintain headquarters in Chicago.

Mr. Stone announced also that Col. E. L. Markey has retired from active service with the Company as of September 1.

George A. Morrison, well known in the middle western field, has succeeded and will work under Mr. Steele in that territory.

It is announced that the changes mentioned above do not in any way affect other Duplex territories. The New York office and territory remain in the hands of I. C. Squier with headquarters in the Times Building. Wallace H. Granger continues in charge of the Pacific Coast field.

New Cutler-Hammer Plant

Cutler-Hammer, Inc., announces the extension of manufacturing facilities to the West Coast. A new plant, at 970 Folsom Street, San Francisco, Cal., began operation this month. Switchboard equipment of various kinds is being manufactured under the direction of R. R. Crooke. The new plant is completely equipped with new machinery. F. H. Oberschmidt is Manager of Cutler-Hammer's Pacific Coast District.

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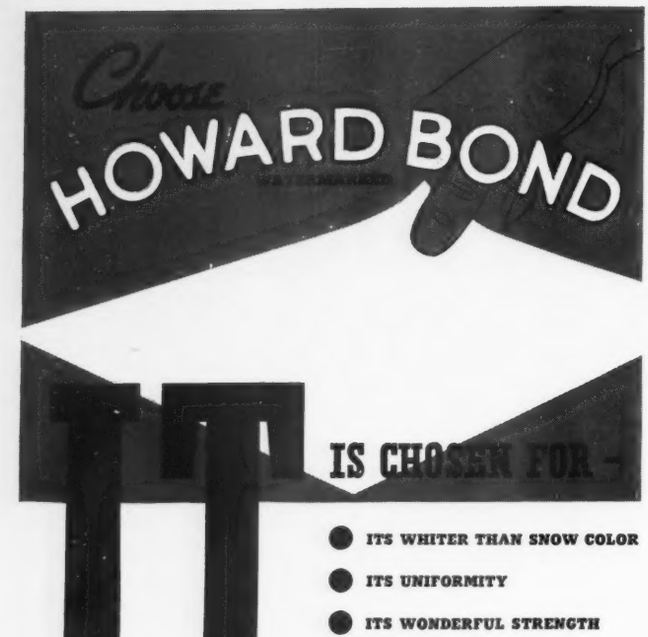


Helpful Hints and Suggestions

I think you are doing a good job and I enjoy receiving your magazine each month. Have been able to find many helpful hints and suggestions. Please keep my name on your mailing list.

H. D. Ross, General Supt.,
Kable Brothers Company,
Mt. Morris, Illinois.

Really A Reference Book

The *Printing* EQUIPMENT *Engineer* Reference Number is the most complete I have ever seen.

The manufacturer's Index and the Products Index are arranged so simple that the book *really is* a Reference Book.

As usual, your News and Technical features are interesting. Keep up the good work.

George Fuller, Stereotype Supt.,
Cleveland *Press*,
Cleveland, Ohio.

Establishes Eastern Branch

The Hammond Machinery Builders, Inc., Kalamazoo, Mich., announce the establishment of a new Eastern Branch Office and Sales Rooms at 148 W. 23rd Street, New York, N. Y.

The new branch, in charge of W. J. Holtmeier, Eastern Manager, will serve the metropolitan area of New York, New England and the North Atlantic States.

Included in the sales and service personnel are T. A. Hession, New York representative, and Frank L. Carrison, Jr., city sales and service. P. H. Miller will cover the New England trade, with headquarters at 90 Front Street, Weymouth, Mass.

It is stated a working display of Hammond TrimOsaws, SterOplate and other Hammond equipment is available for practical demonstration purposes at all times. Printers in New York and vicinity, as well as visiting printers, are cordially invited to call and inspect the new Hammond quarters.

Ink Analysis

(*Continued from Page 15*)

of the same ink is reported as running from a low of 1.35% to a high of 4.33%; the correct amount is 2%.

Even the most accurate results indicated above substantiate our feeling that ink analyses have a very limited use. By such analyses, the amount of carbon black can be determined but the pigment itself will undergo such a change in the process of analysis that the exact type of pigment used cannot be determined. The same is true of other ingredients making up the finished inks. Thus, if an ink were to be reconstructed according to the most accurate analysis reported above, but using different materials from the standards in the original formula, it would only be by the rarest coincidence that an ink would be produced which would have the same consistency, mobility, tonal value, tinctorial strength, etc. Tests which would be much more significant from the standpoint of the practical newspaper operator would involve the physical characteristics of the inks rather than its chemical constituents. Even such tests would have to be regarded in the light of practical experience and with due allowance made for tolerable variations in the conditions under which the various tests are made and under which the finished product is used.

From a practical operating point of view, newspapers are not interested as much in the composition of their inks or the quantities of each raw material used as they are in results obtained and physical characteristics such as: Consistency, length, tack, mobility, dispersion, penetration, tone and color strength. It is only fair to point out that no ink may be perfect in all respects but may be a compromise since one quality may have to be sacrificed somewhat to secure another. For example, it may be necessary to use an oil of greater penetrating quality in order to obtain the correct mobility or color. It is therefore impossible to judge the merits of an ink from one test alone.

We submit below, tests which may be made in any newspaper plant with a minimum of equipment in the hope that they may eliminate the nuisance and expense

EXPERIENCED MONOTYPE EXECUTIVE SEEKS CONNECTION

Executive has an unusual background of experience in many fields of typography. In sales promotion work, in Advertising, Trade Plant, Catalog, Tariff, Commercial and Continuous Form typography he has had marked success.

At present serving a connection but seeks to make a change with possibilities of advancing, either in sales promotion or production capacity. A man of high character, married and has a family. Can furnish references. Will consider any location.

If interested, a letter to Monotype Executive, care of Editor, *Printing* EQUIPMENT *Engineer*, will put you in touch with this executive.

many newspapers have incurred in making press trials of obviously unsuitable inks. They should also obviate many misunderstandings which have occurred in the past due to a mass of misleading data which newspapers have obtained from chemical analyses.

Comparative tests should always be made simultaneously, care being taken to subject both samples to the same conditions. In all tests, cleanliness and accuracy are of paramount importance as a poorly conducted test or a poor interpretation of results may be highly misleading.

Consistency is of primary importance since the working properties of an ink depend largely upon its consistency. Ink is a plastic, not a fluid. Therefore viscosity is not a true measure of an ink's consistency. Consistency of a plastic such as ink has three attributes, length, tack and mobility. These qualities are so inter-related that it is difficult to treat them separately. It is difficult to predetermine which of a number if inks will operate most satisfactorily under certain conditions such as type of press, speed of operation, rubber or composition rollers, etc. It is still more difficult to precisely determine the individual characteristics which make any particular ink the most satisfactory under specific conditions.

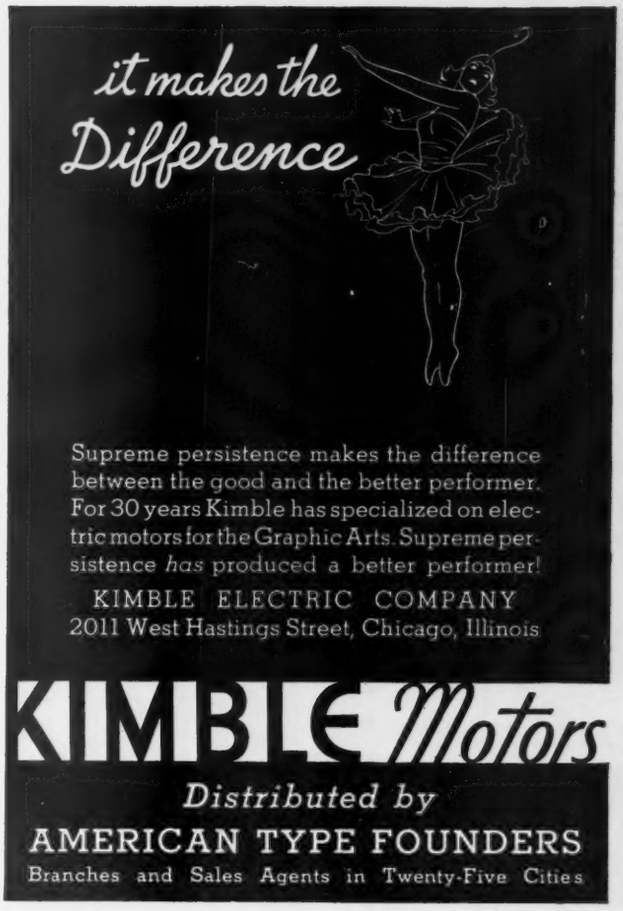
Length is the "stringiness" of a liquid or a plastic. For example, honey and warm tar are long; cup grease, butter, water, kerosene, and gasoline are short. Length is necessary to obtain proper distribution of ink at the highest operating speeds. The shorter an ink is, the sharper it will print. This does not mean that it must be necessarily heaviee or thicker. It is therefore necessary to develop a correct balance between length and shortness to obtain proper distribution and at the same time print with a sharp definition. A practical test for the newspaper plant to determine the relative length of two inks may be made by placing approximately five drops of each of the two inks on a hard surface such as a piece of glass. Carefully place the finger on one sample raising slowly and observe the point at which the connecting film between the finger and glass surface breaks. Repeat with the second sample. Care should be taken to raise the finger at the same rate in each case. The ink which forms the longest connecting film is the longer of the two inks. With a little practice, this simple test is accurate for all practical purposes. Extremes in length and shortness are objectionable and should be avoided. Always stir an ink sample before testing as all inks acquire a "set" when at rest. This may be termed "false body" because the ink appears to be of a different consistency than when the ink is in motion or has been agitated recently. "False body" should not be construed as indicating possible settlement of the pigment in the ink or separation between pigment and vehicle.

Different inks vary in the length of time required to assume a false body and also in the extent to which the ink is temporarily changed. Inks that acquire false body quickly and to a marked extent are apt to cause difficulty in handling as these inks prevent ready flow out of tanks and through ink pipes and fountains. Test: Let the ink to be examined stand undisturbed in a can for twelve hours. Examine by removing carefully a small amount with a spatula, observing how quickly the ink runs into the depression made with the spatula. After carefully noting this, stir the ink well and repeat the test. This will give you an idea as to the extent to which false body is acquired by each ink tested.

Tack is the adhesiveness or stickiness of an ink necessary to transfer ink from type to paper. Extremely accurate tests are possible on delicate laboratory equipment. For practical newspaper use, place about ten drops of an ink on the newsprint used. Press with the index finger and raise quickly. If this lifts fibres from the paper, the ink is far too tacky. If no stickiness is discernible at all, the ink has insufficient tack. Best results in such tests can be obtained by comparing the tack of the ink to be tested with an ink of known satisfactory quality.

Mobility is the ease with which a plastic moves. It is an important factor in the consistency of an ink. Mobility is to a plastic what flowing quality is to a liquid. For example, water flows readily, honey less readily. Honey flows better than cup grease although cup grease may be softer. Inks which possess insufficient mobility will not flow properly in an ink fountain. Nor will they lay smoothly or cover properly on solids, just as cup grease cannot be spread as smoothly as honey. The following simple test requires no equipment but gives only the relative flow of two inks: Place the same amount of two inks, determined by weight, side by side at one edge of a clean piece of glass. Make sure that the inks are at the same temperature and have each been stirred the same number of times. Tip the glass to an angle of 45 deg. The ink having the greatest flow or mobility will move down the glass most rapidly.

In tipping the glass it should not be raised to the point where either ink flows too rapidly otherwise accurate comparison will not be obtained due to slippage of the inks on the glass surface. A still less accurate comparison could be made very quickly by observing how the different inks run off an ink knife or spatula. In making mobility tests, it is essential that each ink be stirred thoroughly and to the same degree before testing.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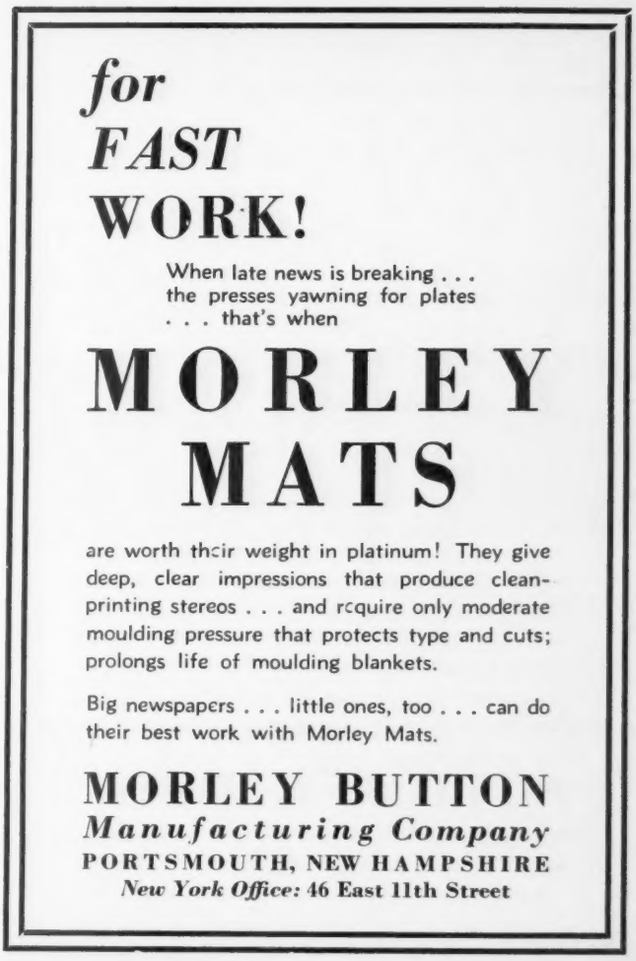
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Dispersion—The finer an ink is ground, the more thorough will be its dispersion and the smoother the resulting ink with a corresponding improvement in working quality.

A simple test for fineness of grinding is to spread some ink on a clean piece of plate glass with a spatula. When the blade of the spatula is passed quickly over the ink, a well ground ink will instantly result in a smooth surface, whereas a poorly ground ink will show granules or small lumps as a form of graininess which will disappear in a few moments as the graunles or grains sink into the softer portions of the ink. The presence of grit or hard crystalline carbon black can be determined by spreading the ink on glass in a fine film and the hard particles may be felt beneath the blade of an ink knife. Particular care should be taken to have the glass clean when this test is made. Also air bubbles should not be confused with graininess in an ink.

Penetration—The same test may be used in slightly different manner to determine which ink penetrates most and also which paper stock permits greater penetration. Place a stack of ten sheets of two or more different papers side by side on a table. On each stack of paper place two or more flat metal washers which have been machined accurately to the same thickness and containing holes which have been machined to precisely the same diameter of about ¾ in. Place in the hole of each washer, identically the same quantity of ink determined by weight. Thus the same amount of ink has been applied to each washer on the same paper stock and also on different paper stocks.

Let the ink-filled washers stand for twenty-four hours, after which you may observe through how many sheets the ink has penetrated in each case. In observing the results of this test, it is important to note not only the number of sheets through which the oil has struck but also the color of the oil since a dark brown penetration is considered more objectionable than a colorless strike-through. It might be preferable to have an ink which penetrates eight sheets with a colorless stain than an ink that penetrates but six sheets with a dark brown color.

Tone—This is largely a matter of taste. Generally a brownish tone is objectionable because it gives a flat washed-out appearance, particularly noticeable on halftones. All combinations of carbon black and oil have a brownish cast due to the undertone of carbon black and often to the color of the oil. To overcome this brownish undertone, a toner is added to ink, consisting of relatively small percentages of blue or purple dyes. Blue toners give ink a true grey appearance in the halftones if used in just the correct amount. They also tend to produce a slate colored black in the solids. Purple toner gives a print a greater strength than blue and a denser appearance in the solids. To test the relative tone of two different inks, place equal amounts, about ten drops, of the two inks about an inch apart near the top of a sheet of paper on a smooth surface. Take a broad bladed spatula and draw the two ink spots down simultaneously. This is best done by holding the blade at an angle of about 45 deg. from the paper and pressing down evenly with moderate force. The motion of the drawdowns should be even and started well above the spots of ink. Examine the color of the ink in *daylight*, observing the color both by looking down at the paper to observe the ink by reflected light and also with the paper held between the eye and the source of light so that it may be observed by transmitted light. Another comparison of the toner value of two inks, is to observe the halo resulting in the penetration test. Newspapers should not be interested in the quantity of toner used as much as in the tonal effect which they obtain. Toner which produces a uniformly distributed color to the halo resulting in the penetration test is preferable. The relative density or quantity of toner in different inks may be judged visually by the depth of shade of the different halos.

Color Strength—The strength of news ink depends almost entirely on the percentage of carbon black in the ink. Working qualities of news ink are better when ink can be manufactured with a smaller percentage of carbon black since excessive carbon black is apt to cause fill-up of screens and small openings and even create piling on solids, accumulation on blankets, angle bars and pipe rollers. Test:—Weigh out two samples of exactly the same quantity of each of the inks to be tested and place them on a glass slide. Weigh out exactly fifty times as much soft (news ink body) zinc white for each amount of news ink weighed out. With a spatula or ink knife, rub but do not grind each sample of black and white together until a uniform grey results. Place these two grey tints beside each other on the underside of a piece of clear glass and the difference in shade or strength if any, will be apparent at once. The darker grey naturally indicates the stronger ink. Tints can be judged better than undiluted inks. To get accurate relative strength, reduce the stronger grey with white ink until it appears equal in strength to the weaker sample, recording accurately, the exact weight of additional white necessary to do this. The color strength will then be the inverse ratio of white added to each sample of black.

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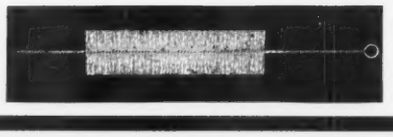
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• Technical Literature

Readers of *Printing* EQUIPMENT *Engineer* who are interested, may secure any of the Books, Catalogs or Bulletins listed below by checking the literature desired in the square opposite the title. Mark carefully only that literature which you wish to receive. Fill out the coupon and send it to us. The literature will be forwarded gratis except where noted.

☐ *Embossed Unifoil Sample Book*—Size 5 in. by 8 in. Shows sample pieces of Embossed Unifoil Metal-Faced Papers. Section 3 of the book contains an assortment of Moire, Fleurette. Duotone and Starburst pattern metallic-faced papers in silver and 12 colors.

☐ *Monotype-Huebner Vertical Photo-Composing Machine*—Bulletin illustrates and describes photo-composing machine with non-embossing negative holder and notch-bar and micrometer screw precision register device for accurately positioning images on the plate.

☐ *Bulletin*—Announces steam feeder in combination with two-color 42 in. by 58 in. offset press.

☐ *Little Giant Tork Clocks*—Bulletin describes instrument for controlling electrical circuits automatically. Will handle 5000 W. lighting load.

☐ *General Catalog*—Illustrates and describes anti-vibration products and devices for machinery of all kinds.

☐ *New Folder*—Descriptive of recent line composing machine developments is being distributed by the Intertype Corporation. Featured items are the new four-magazine Intertypes, automatic quadding and centering, low-slug quadding, automatically justified indentions, finger-flip changes of type on Intertype "mixer" machines, and the Intertype one-machine all-slug system.

☐ *The Machine of a Thousand Speeds*—Bulletin No. 602 describes line of photoengravers' etching machines, power rocking tubs, soaking vats, trays, acid-proof piping, etc.

☐ *New Paper Drilling Machine*—Folder illustrates and describes machine for drilling, slitting, slotting and V-Slotting holes and for round cornering.

☐ *Bulletin*—Descriptive of Single Head Stitcher and Feeder with Multiple Stations. Brief descriptions with illustrations of the other bindery equipment also given.

☐ *Block Levellers*—Bulletin gives data on several models for obtaining accurate blocking of printing plates.

☐ *Help Keep Your Idle Presses Busy*—Two-color folder demonstrates improved appearance of job overprinted with Overprint Varnish as compared to the same job not overprinted.

☐ *Bulletin 602*—Describes and illustrates etching machines, power rocking tubs, soaking vats, trays, acid-proof piping for engraving plants.

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Report

(*Continued from Page 30*)

promoting this research laboratory. He also revealed that the first function of the laboratory would be to make technical and mechanical research and give the results of such research to the members of the industry.

The National Printing Equipment Association appointed a committee to investigate and report on the research laboratory of the United Typothetae of America.

R. B. Mitchell reported progress of his committee on the Clearing Corporation for Used Machinery. In view of the fact that the Association felt that the research project was the most important, no definite action has been taken for the Clearing Corporation for Used Machinery. Mr. Mitchell's report on his committee was accepted.

The organization adjourned after authorizing the Board of Directors to appoint the new directors for the ensuing year.

Link-Richardson Shift

Leon A. Link, until recently superintendent of the Des Moines (Ia.) *Register* and *Tribune*, is now in charge of the Akron (O.) *Times-Press* composing room. Ray Richardson has assumed a new position as superintendent of the Buffalo *Times*, having resigned his position on the Akron (O.) *Times-Press*. Harry Murphy has succeeded to Mr. Link's former position in the Des Moines *Register* and *Tribune* composing room.

A. T. F. Library and Museum Moved to Columbia University

The Typographic Library and Museum of American Type Founders, Incorporated, is now being moved to Columbia University, where it will be maintained as a separate entity in South Hall and be in charge of Dr. Charles C. Williamson, Director of the University Libraries, according to announcement made by Thomas R. Jones, President of American Type Founders, Inc.

Presses for South America

Ten carloads of printing press equipment are now en route to the Argus South African Newspapers, Ltd., Cape Town, So. Africa, from The Goss Printing Press Co., Chicago. The shipment was made via New Orleans on the S.S. *Challenger* which sailed September 1.

The total shipping weight approximates 225 tons, comprising 206 boxes and 48 cases. The new equipment includes four Goss High Speed Balcony Type Anti-Friction Units and one double folder. These units are similar to those in operation at the Chicago *Tribune*, New York *News*, and the nine recently purchased by the Indianapolis *Star*.

ATF Promotions

Harry W. Alexander has been elected Vice President in Charge of Sales of American Type Founders Sales Corporation, Elizabeth, N. J. H. I. Lewis has been elected Vice President in Charge of Manufacturing of American Type Founders, Inc. He has been Works Manager.

Announce New Office

The Fuchs & Lang Mfg. Co., Div. of General Printing Ink Corporation, announces a new and enlarged Cleveland branch office at 310 Lakeside Ave. The new office will be under the management of Ralph Bazold. All mechanical executives are cordially invited to visit the new branch office.

Paper Processing Literature

Three new folders, illustrated, on Pony Round Hole Rotary Perforator, Automatic Paper Drill and Extra Heavy Foot-Power Perforator have been prepared by F. P. Rosback Company. Copies of these folders may be obtained from the manufacturer direct or in care of *Printing* Equipment *Engineer*.

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Railway Express Agency, Inc. *Agency:* The Caples Company, New York, N. Y.	36
Reid Brothers Company, Inc.	52
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Riegel Paper Corporation *Agency:* William H. Hodgins, New York, N. Y.	45
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Scott, Walter, & Company *Agency:* Doyle, Kitchen & McCormick, Inc., New York, N. Y.	33
Southworth Machine Company *Agency:* Harmon Advertising Agency, Portland, Maine.	48
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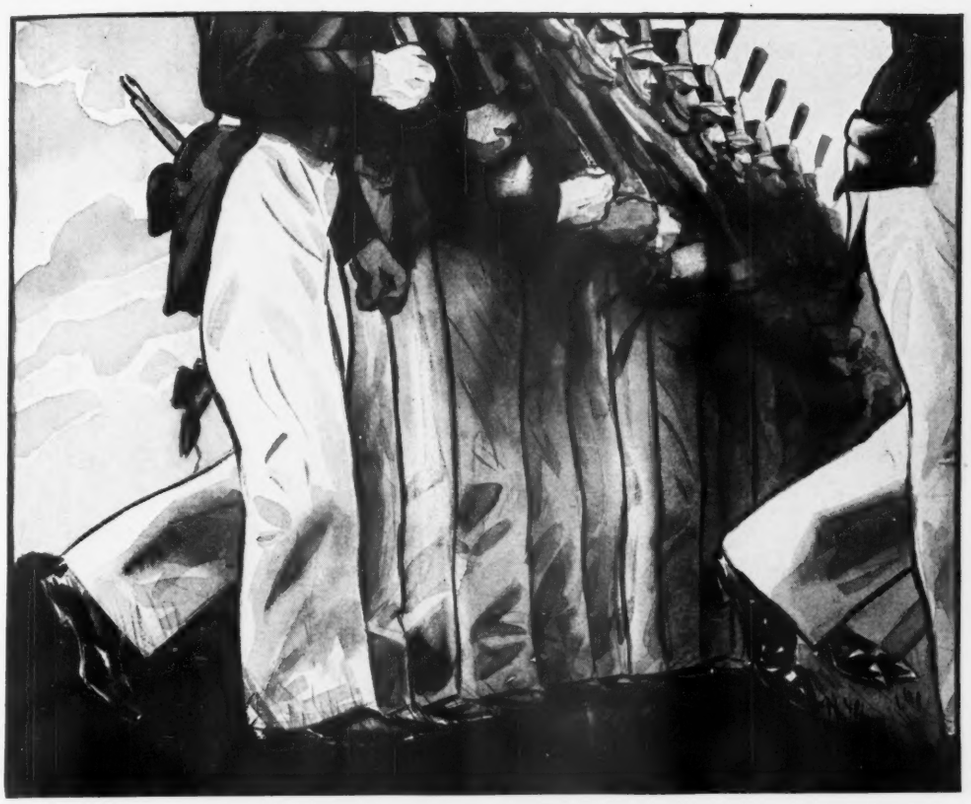
U. S. Electrical Motors, Inc. *Agency:* The McCarty Company, Los Angeles, Calif.	5
Vandercook & Sons, Inc. *Agency:* Clifton Kirkpatrick, Chicago, Ill.	34
Vulcan Proofing Company *Agency:* Fred Glen Small, Inc., New York, N. Y.	46
Western Brush Company, Inc.	52
Wood Flong Corporation *Agency:* Meredith & Company, Inc., Troy, New York.	30



KEEPING STEP

A message of interest concerning the proper relationship of Rollers, Inks and Presses

PRINTERS:

Today manufacturers of inks, varnishes and lacquers are producing many absolutely new and improved products. Many of these are radically different from any formerly on the market, due to the creation and use of new chemicals and solvents in the formulas.

Some of these inks will ruin a set of rollers in a short time if the roller materials are not of a type that can withstand the action of these new ink compounds.

Before making a change from the type of ink you ordinarily use, consult your ink representative regarding the proper roller to use.

Ideal Rollers are the answer to almost every question concerning rollers that possess a natural affinity for any special ink because there is a specially compounded Ideal Roller material to serve any specific ink formula or type of job. One type of roller will not serve all purposes.

INK MAKERS:

You have developed many improved types of products which are truly a credit to the trade.

In a spirit of friendly cooperation, may we suggest that before placing them on the market they be thoroughly tested on various kinds of roller materials. Forestall any danger of rollers being damaged by chemical reactions of the inks.

Our laboratory is offered as a source of testing such inks, varnishes and lacquers. Do not take a chance.

We know of inks with merit that were condemned because of their harmful effect on rollers. A proper roller recommendation would have saved these inks from criticism.

If ink makers and roller makers will work together, our mutual customers will greatly benefit by the alliance.

IDEAL ROLLER & MFG. CO.

CHICAGO *Sales and Service Representatives in Principal Cities* NEW YORK

UNIT-BUILT INTERTYPES • SIMPLE AS A B C

	Number of Main Magazines	Available Side Magazines
Model A	1 90-channel	1 or 3
Model B	2 90-channel	1 or 3
Model C	3 90-channel	1 or 3
Model F (Mixer)	2 90-channel	2 or 4
Model G (Mixer)	1 90 and 1 72-channel	2 or 4
Model H (Display Machine)	3 72-channel	1 or 3
"Four-Deck" Model C	4 90-channel	1 or 3
"Four-Deck" Model F (Mixer)	4 90-channel	2 or 4
"Four-Deck" Model G (Mixer)	2 90 and 2 72-channel	2 or 4
"Four-Deck" Model H (Display Machine)	4 72-channel	1 or 3

All of the above Intertype 90-channel magazines are interchangeable, as are the wide 72-channel magazines and the side magazines